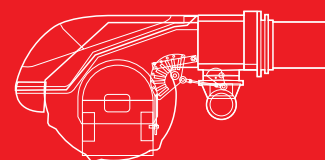




RS Series

Two Stage Progressive Gas Burners

RS 34 MZ	45/125 ÷	390	kW
RS 44 MZ	80/203 ÷	550	kW
RS 50	115/290 ÷	600	kW
RS 64 MZ	150/400 ÷	850	kW
RS 70	192/465 ÷	814	kW
RS 100	232/698 ÷	1163	kW
RS 130	372/930 ÷	1512	kW
RS 150	300/900 ÷	1850	kW
RS 190	470/1279 ÷	2290	kW



The RS burners series covers a firing range from 45 to 2290 kW, and it has been designed for use in low or medium temperature hot water boilers, hot air or steam boilers, diathermic oil boilers.

Operation is "two stage progressive"; the burners are fitted with a microprocessor control panel which supplies indication of operation and diagnosis of fault cause.

The elevated performance of the fans and combustion head, guarantee flexibility of use and excellent working at all firing rates.

The exclusive design ensures reduced dimensions, simple use and maintenance. A wide range of accessories guarantees elevated working flexibility.

Technical Data

MODEL			RS 34 MZ	RS 44 MZ	RS 50	RS 64 MZ
Operation			Two stage progressive			
Modulation ratio at max. output			2 ÷ 1			
Servomotor		type	SQN90			
		run time s	12			
Heat output		kW	45/125÷390	80/203÷550	115/295÷600	150/400÷850
		Mcal/h	39/108÷336	64/175÷473	99/254÷516	130/345÷730
Working temperature		°C min.ax.	0/40			
FUEL/AIR DATA						
G20 gas	net calorific value	kWh/Sm³	9.45			
	gas density	kg/Sm³	0.71			
	gas delivery	Nm³/h	7/13÷39	10/20÷55	11.6/29÷58	15/40÷85
G25 gas	net calorific value	kWh/Sm³	8.13			
	gas density	kg/Nm³	0.78			
	gas delivery	Nm³/h	8/15÷45	12/24÷64	13.5/34÷68	17/47÷99
LPG gas	net calorific value	kWh/Nm³	25.8			
	gas density	kg/Nm³	2.02			
	gas delivery	Nm³/h	3/5÷15	4/8÷21	4.5/11÷23	6/16÷33
Fan		Type	(02)	(02)	(01)	(02)
Air temperature		Max °C	60			
ELECTRICAL DATA						
Electrical supply		Ph/Hz/V	(04)	(04) (06)	(05)	(05)
Auxiliary electrical supply		Ph/Hz/V	(04)	(04)	(03)	(03)
Control box		Type	RMG			
Total electrical power		kW	0.6	0.7 0.8	0.75	1.2
Alimentazione elettrica ausiliaria		kW	0.3	0.28 0.35	0.12	0.3
Protection level		IP	40	40	44	40
Fan motor	electrical power	kW	0.3	0.42 0.45	0.65	1.1
	rated current	A	3.2	3.5 2 - 1.4	3 - 1.7	4.8 - 2.8
	start up current	A	15	17 14 -10	13.8 - 8	22 -13
	protection level	IP	40	40	44	40
Ignition transformer		V1 - V2	230V-1x15 kV	230V-1x15 kV	230V-1x8 kV	230V-1x15 kV
		I1 - I2	1A - 25 mA	1A - 25 mA	1A - 20 mA	1A - 25 mA
Operation			Intermittent (at least one stop every 24 h)			
EMISSIONS						
Noise levels	sound pressure	dB(A)	68	70	72	76
	sound power		79	81	--	--
CO Emission		mg/kWh	< 40			
NOx Emission		mg/kWh	< 120	< 120	< 130	< 120
APPROVAL						
Directive			2006/42/EC - 2016/426/EU - 2014/30/EU - 2014/35/EU			
Conforming to			EN 676			
Certification			CE 0085BR0381	CE 0085BR0381	CE 0085AP0735	CE 0085BR0558

- (01) Centrifugal with reverse curve blades
 (02) Centrifugal with forward curve blades
 (03) 1/50/230~(±10%)

- (04) 1/50-60/230~(±10%)
 (05) 3/50/230-400~(±10%)
 (06) 3/50-60/230-400~(±10%)

Reference conditions:

Temperature: 20°C - Pressure: 1013.5 mbar - Altitude: 0 m a.s.l. - Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

MODEL			RS 70	RS 100	RS 130	RS 150	RS 190
Operation			Two stage progressive				
Modulation ratio at max. output			2 ÷ 1				
Servomotor	type		LKS210			SQN31	
	run time s		15				
Heat output	kW		192/465÷814	232/698÷1163	372/930÷1512	300/900÷1850	470/1279÷2290
	Mcal/h		165/400÷700	200/600÷1000	320/800÷1300	258/774÷1590	405/1100÷1970
Working temperature		°C min.ax.	0/40				
FUEL/AIR DATA							
G20 gas	net calorific value	kWh/Sm³	9.45				
	gas density	kg/Sm³	0.71				
	portata gas	Nm³/h	19/46.5÷81.4	23/70÷116	37/93÷151	30/90÷185	47/128÷229
G25 gas	net calorific value	kWh/Sm³	8.13				
	gas density	kg/Nm³	0.78				
	gas delivery	Nm³/h	22/54÷95	27/81÷135	43/108÷176	35/105÷215	55/149÷266
LPG gas	net calorific value	kWh/Nm³	25.8				
	gas density	kg/Nm³	2.02				
	gas delivery	Nm³/h	7.4/18÷32	9/27÷45	14.4/36÷59	12/35÷72	18/50÷89
Fan		Tipo	(01)	(01)	(01)	(01)	(02)
Air temperature		Max °C	60				
ELECTRICAL DATA							
Electrical supply		Ph/Hz/V	3/50/230-400~(±10%)			(07) (08)	(07) (08)
Auxiliary electrical supply		Ph/Hz/V	1/50/230 ~ (±10%)				
Control box		Type	RMG				
Total electrical power		kW	1.4	1.8	2.6	4	5.5
Alimentazione elettrica ausiliaria		kW	0.3	0.3	0.4	0.5	1
Protection level		IP	44				
Fan motor	electrical power	kW	1.1	1.5	2.2	3.0	4.5
	rated current	A	4.1 - 2.4	5.5 - 3.4	7.9 - 4.6	10.2 - 5.9	15.8 - 9.1
	start up current	A	25 - 14.6	27.7 - 16	57.2 - 33.2	79 - 45.8	126 - 72.8
	protection level	IP	44				
Ignition transformer		V1 - V2	230V-1x8 kV				
		I1 - I2	1A - 20 mA				
Operation			Intermittent (at least one stop every 24 h)				
EMISSIONS							
Noise levels	sound pressure	dB(A)	75	77	78.5	83.1	83
	sound power						
CO Emission		mg/kWh	< 40				
NOx Emission		mg/kWh	< 130				
APPROVAL							
Directive			2006/42/EC - 2016/426/EU - 2014/30/EU - 2014/35/EU				
Conforming to			EN 676				
Certification			CE 0085AP0944	CE 0085AP0945	CE 0085AP0946	in progress	CE 0085AT0042

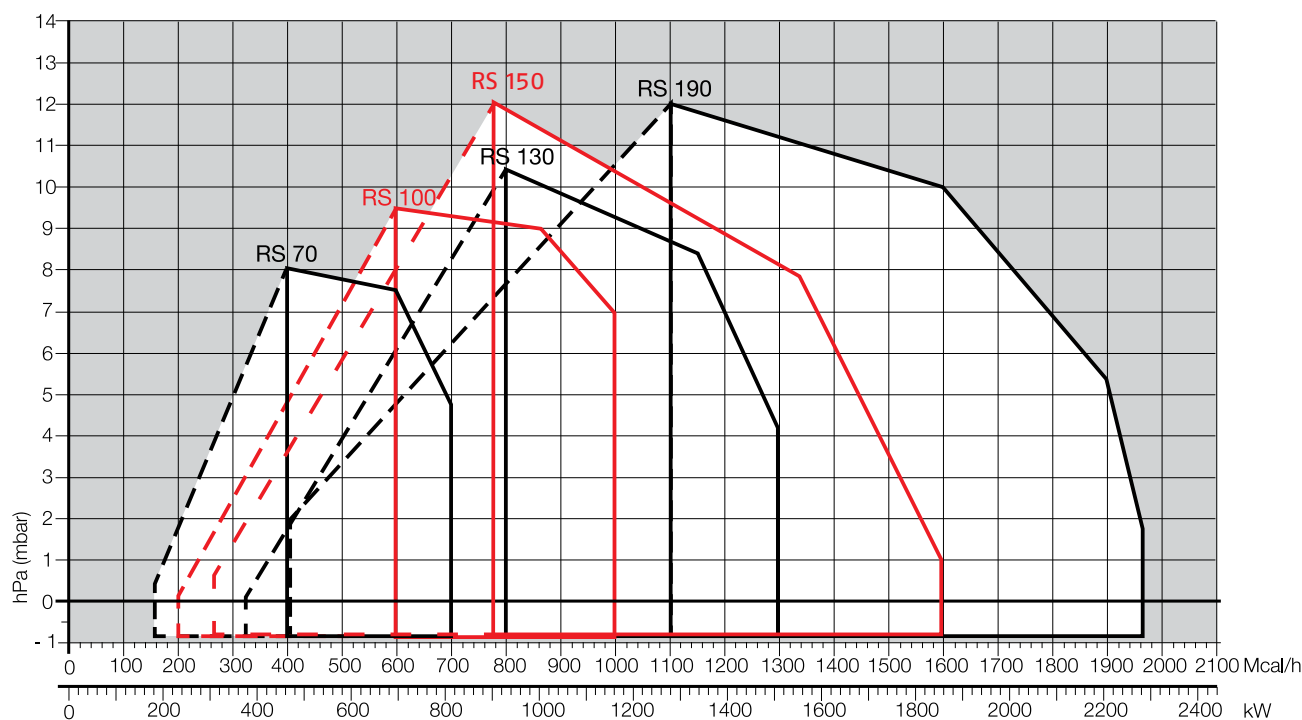
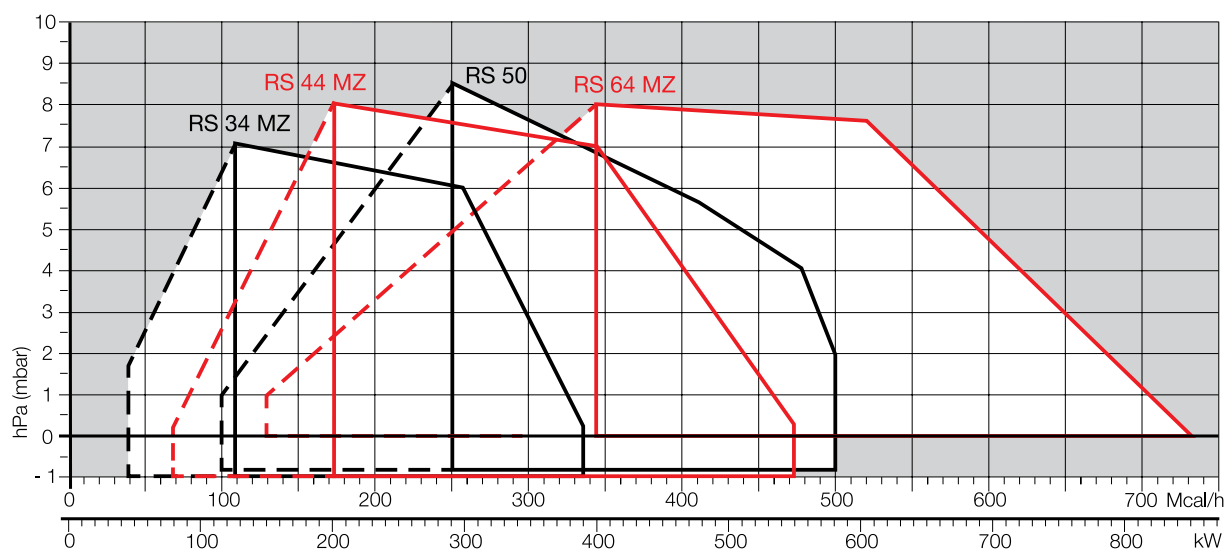
(01) Centrifugal with reverse curve blades
 (02) Centrifugal with forward curve blades

(07) 3/50/400~(±10%)
 (08) 3/50/230~(±10%)

Reference conditions:

Temperature: 20°C - Pressure: 1013.5 mbar - Altitude: 0 m a.s.l. - Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

Firing Rates



□ Useful working field for choosing the burner

[-] Modulation range (1st stage operation range)

Test conditions conforming to EN 676:

Temperature: 20°C

Pressure: 1013,5 mbar

Altitude: 0 m a.s.l.

Gas train

GAS TRAIN DESIGNATION

Series:		CB						
		DMV						
		MB						
		MBC						
Size:		405	407	410	412	415	420	
							1200	-
							1900	3100
							5000	
					512	-	520	525
							5065	5080
							50100	50125
							50150	
Operation:		/1	1st stage mode opening					
		/2	2nd stage mode opening					
Leak detection control:		-	0					
		CT	leak detection control device installed on the gas train					
		CQ	equipped with pressure switch for leak detection control					
Joint type:		R	threaded joint					
		F	standard flange ISO					
Electrical connection:		T	Terminals - Terminal strip					
		SD	Domestic plug					
		SM	Medium voltage plug					
Standard output pressure range:		-	without pressure governor					
		0	with governor and air/gas proportional pressure					
		2	with governor and output pressure up to 20 mbar					
		3	with governor and output pressure up to 30 mbar					
		4	with governor and output pressure up to 40 mbar					
		5	with governor and output pressure up to 50 mbar					
		6	with governor and output pressure up to 60 mbar					
		8	with governor and output pressure up to 80 mbar					
		15	with governor and output pressure up to 150 mbar					
Valve control:		0	shared					
		2	separate					

MBC	1200	/1	CT	R	SM	6	0
BASIC DESIGNATION			EXTENDED DESIGNATION				

The burners are fitted with a butterfly valve to regulate the fuel delivery on 1st and 2nd stage, controlled by a variable profile cam servomotor.

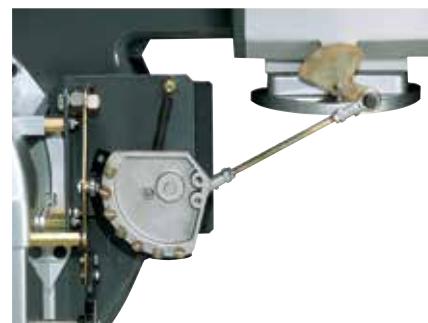
Fuel can be supplied either from the right or left hand sides.

The gas train can be selected to best fit system requirements depending on the fuel output and pressure in the supply line.

The gas train can be "Multibloc" type (containing the main components in a single unit) or "Composed" type (assembly of the single components).

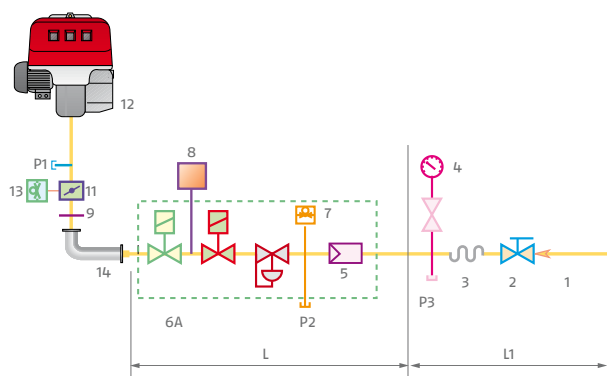


Example of the variable profile cam on RS 34-44 MZ burners.

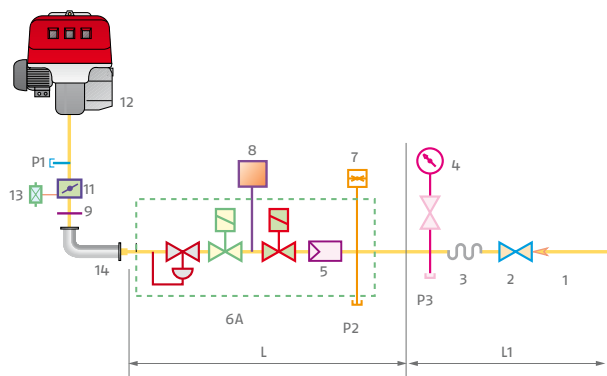


Example of the variable profile cam on RS 70-100-130 burners.

MB "THREADED"

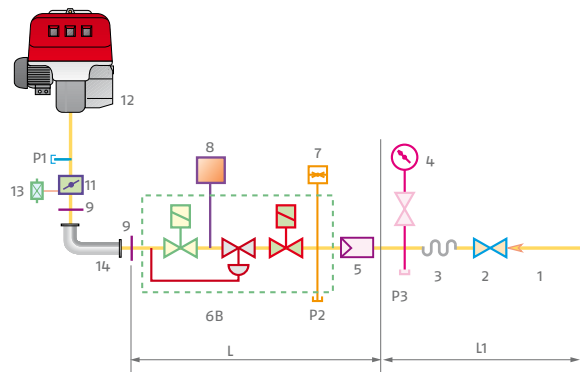


MBC "THREADED"



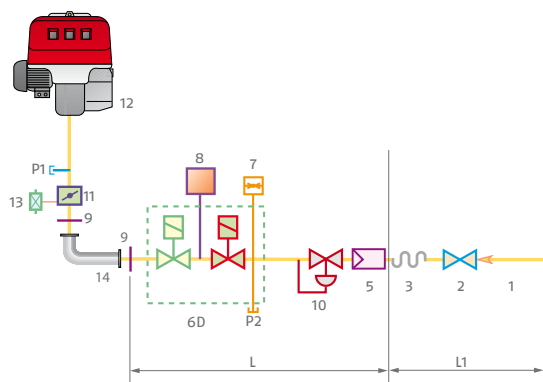
1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6A	Includes:
	- filter
	- operation valve
	- safety valve
	- pressure adjuster
7	Minimum gas pressure switch
8	Leak detection device, supplied as an accessory or incorporated, based on the gas train code
9	Gasket, for "flanged" versions only
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor, supplied separately
P1	Combustion head pressure
P2	Upstream pressure of valves
P3	Upstream pressure of the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer's responsibility

MBC "FLANGED"

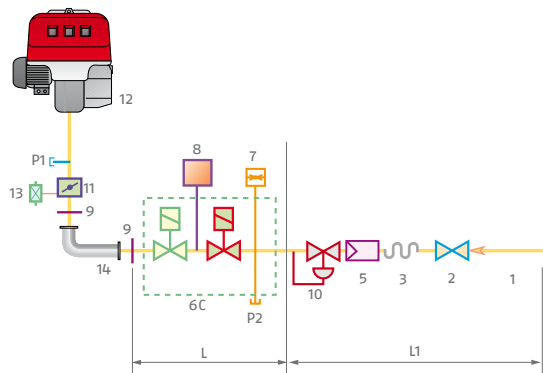


1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6B	Includes:
	- operation valve
	- safety valve
	- pressure adjuster
6C	Includes:
	- operation valve
	- safety valve
6D	Includes:
	- operation valve
	- safety valve
7	Minimum gas pressure switch
8	Leak detection device, supplied as an accessory or incorporated, based on the gas train code
9	Gasket, for "flanged" versions only
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor, supplied separately
P1	Combustion head pressure
P2	Upstream pressure of valves
P3	Upstream pressure of the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer's responsibility

CB "FLANGED OR THREADED"



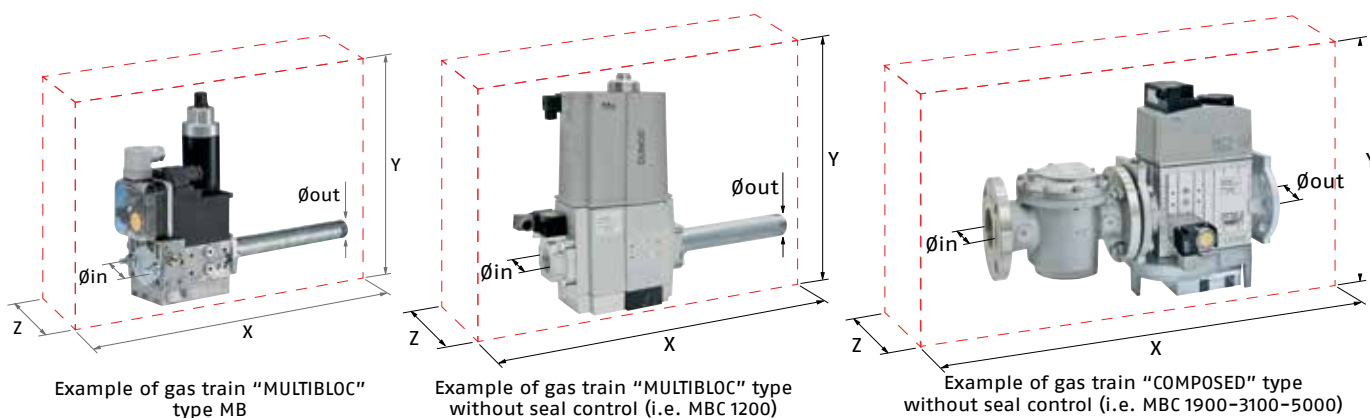
DMV "FLANGED OR THREADED"



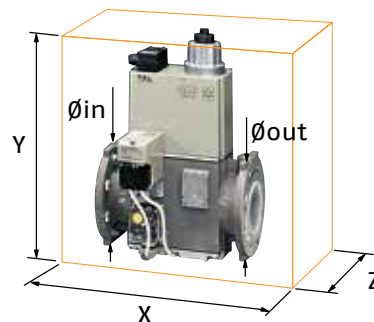
Gas trains are approved by standard EN 676 together with the burner.

The overall dimensions of the gas train depends on how they are constructed. The following table shows the maximum dimensions of the gas trains that can be fitted to RS burners, intake and outlet diameters and seal control if fitted.

Please note that the seal control can be installed as an accessory, if not already installed on the gas train. The maximum gas pressure of gas train "Multibloc" type is 360 mbar, and that one of gas train "Composed" type is 500 mbar. The range of pressure in the MULTIBLOC with flange can be modified choosing the stabiliser spring (see gas train accessory).



Example of gas train "CB" series with seal control



Example of gas train "DMV" series with seal control

GAS TRAIN

MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
MB 405/1 - RT 20	3970500	Rp 3/4"	Rp 3/4"	371	186	92
MB 407/1 - RT 20	3970553	Rp 3/4"	Rp 3/4"	371	196	92
MB 407/1 - RT 52	3970599	Rp 3/4"	Rp 3/4"	371	196	92
MB 407/1 - RSM 20	3970229	Rp 3/4"	Rp 3/4"	371	196	92
MB 410/1 - RT 52	3970258	Rp 1" 1/2	Rp 1" 1/2	405	217	116
MB 410/1 - RT 20	3970554	Rp 3/4"	Rp 3/4"	405	217	116
MB 410/1 - RT 52	3970600	Rp 3/4"	Rp 3/4"	405	217	116
MB 410/1 - RSM 20	3970230	Rp 3/4"	Rp 3/4"	405	221	116
MB 412/1 - RT 52	3970256	Rp 1" 1/2	Rp 1" 1/2	433	217	116
MB 412/1 - RT 20	3970144	Rp 1" 1/2	Rp 1" 1/2	433	217	116
MB 412/1 CT RT 20	3970197	Rp 1" 1/2	Rp 1" 1/2	523	217	116
MB 412/1 - RSM 20	3970231	Rp 1" 1/2	Rp 1" 1/2	433	217	116
MB 415/1 - RT 30	3970180	Rp 1-1/2"	Rp 1-1/2"	523	250	100
MB 415/1 CT RT 30	3970198	Rp 1-1/2"	Rp 1-1/2"	523	250	229
MB 415/1 - RT 52	3970250	Rp 1-1/2"	Rp 1-1/2"	523	250	100
MB 415/1 CT RT 52	3970253	Rp 1-1/2"	Rp 1-1/2"	523	250	229
MB 415/1 RSM 30	3970232	Rp 1-1/2"	Rp 1-1/2"	523	250	100
MB 420/1 RT 30	3970181	Rp 2"	Rp 2"	523	300	100
MB 420/1 CT RT 30	3970182	Rp 2"	Rp 2"	523	300	229

GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
MB 420/1 RT 52	3970257	Rp 2"	Rp 2"	523	300	100
MB 420/1 CT RT 52	3970252	Rp 2"	Rp 2"	523	300	229
MB 420/1 RSM 30	3970233	Rp 2"	Rp 2"	523	300	100
MB 420/1 CT RSM 30	3970234	Rp 2"	Rp 2"	523	300	229

GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
MBC 1200/1 - RSM 60	3970221	Rp 2"	Rp 2"	528	424	161
MBC 1200/1 CT RSM 60	3970225	Rp 2"	Rp 2"	528	424	290
MBC 1900/1 - FSM 40	3970222	DN 65	DN 65	613	430	237
MBC 1900/1 CT FSM 40	3970226	DN 65	DN 65	613	430	298
MBC 3100/1 - FSM 40	3970223	DN 80	DN 80	633	500	240
MBC 3100/1 CT FSM 40	3970227	DN 80	DN 80	633	500	319
MBC 5000/1 - FSM 80	3970224	DN 100	DN 100	733	576	280
MBC 5000/1 CT FSM 80	3970228	DN 100	DN 100	733	576	348

GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
CB 512/1 - RSM 30	3970145	Rp 1-1/2"	Rp 1-1/2"	891	261	245
CB 512/1 - CT RSM 30	20045589	Rp 1-1/2"	Rp 1-1/2"	891	261	245
CB 520/1 - RSM 30	3970146	Rp 2"	Rp 2"	986	328	255
CB 520/1 - CT RSM 30	3970160	Rp 2"	Rp 2"	986	328	255
CB 525/1 - RSM 30	20044659	Rp 2"	Rp 2"	1025	356	285
CB 525/1 - CT RSM 30	20044660	Rp 2"	Rp 2"	1025	356	285
CB 5065/1 - FSM 30	3970147	DN 65	DN 65	906	356	285
CB 5065/1 CT FSM 30	3970161	DN 65	DN 65	906	356	285
CB 5080/1 - FSM 30	3970148	DN 80	DN 80	934	416	285
CB 5080/1 CT FSM 30	3970162	DN 80	DN 80	934	416	285
CB 50100/1 - FSM 30	3970149	DN 100	DN 100	1054	501	350
CB 50100/1 CT FSM 30	3970163	DN 100	DN 100	1054	501	350
CB 50125/1 - FSM 30	20015871	DN 125	DN 125	1164	780	400
CB 50125/1 CT FSM 30	3970196	DN 125	DN 125	1164	780	400

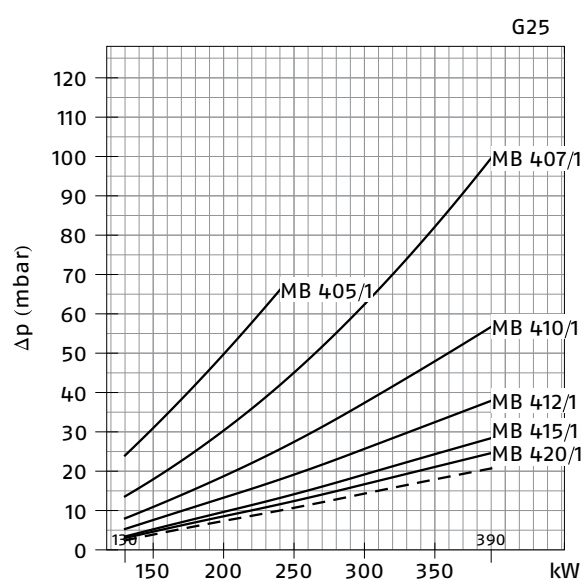
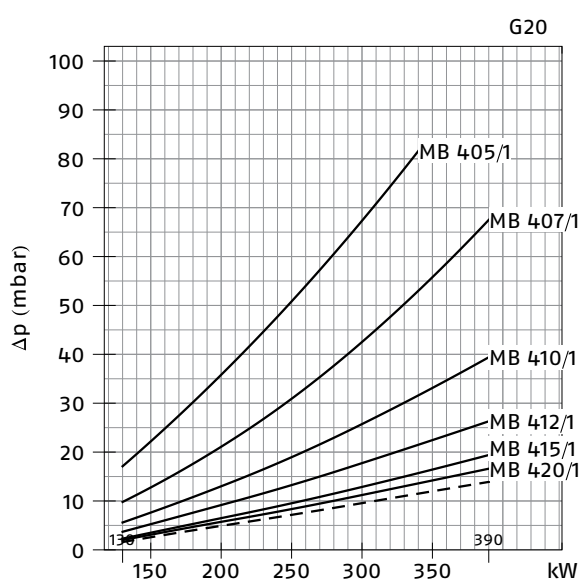
GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
DMV 512/1 - RSM - 0	20043035	Rp 1-1/2"	Rp 1-1/2"	490	292	245
DMV 512/1 - CT RSM - 0	20043036	Rp 1-1/2"	Rp 1-1/2"	490	292	245
DMV 512/1 - CQ RSM - 2	20043037	Rp 1-1/2"	Rp 1-1/2"	490	292	245
DMV 520/1 - RSM - 0	20043038	Rp 2"	Rp 2"	490	292	255
DMV 520/1 CT RSM - 0	20043039	Rp 2"	Rp 2"	490	292	255
DMV 520/1 CQ RSM - 2	20043040	Rp 2"	Rp 2"	490	292	255
DMV 525/1 - RSM - 0	20043053	Rp 2"	Rp 2"	530	338	270
DMV 525/1 CT RSM - 0	20043054	Rp 2"	Rp 2"	530	338	270
DMV 525/1 CQ RSM - 2	20043055	Rp 2"	Rp 2"	530	338	270
DMV 5065/1 - FSM - 0	20043041	DN 65	DN 65	290	338	270
DMV 5065/1 CT FSM - 0	20043042	DN 65	DN 65	290	338	270
DMV 5065/1 CQ FSM - 2	20043043	DN 65	DN 65	290	338	270
DMV 5080/1 - FSM - 0	20043044	DN 80	DN 80	310	397	290
DMV 5080/1 CT FSM - 0	20043045	DN 80	DN 80	310	397	290
DMV 5080/1 CQ FSM - 2	20043046	DN 80	DN 80	310	397	290
DMV 50100/1 - FSM - 0	20043047	DN 100	DN 100	350	449	307
DMV 50100/1 CT FSM - 0	20043048	DN 100	DN 100	350	449	307
DMV 50100/1 CQ FSM - 2	20043049	DN 100	DN 100	350	449	307
DMV 50125/1 - FSM - 0	20043050	DN 125	DN 125	400	554	333
DMV 50125/1 CT FSM - 0	20043051	DN 125	DN 125	400	554	333
DMV 50125/1 CQ FSM - 2	20043052	DN 125	DN 125	400	554	333

Pressure Drop Diagram

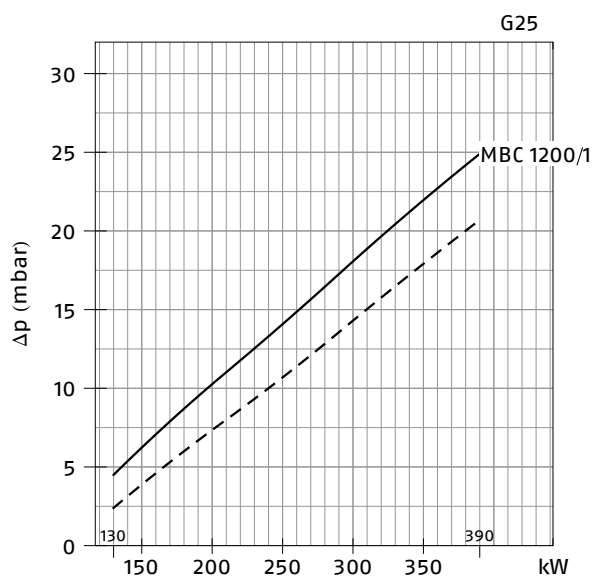
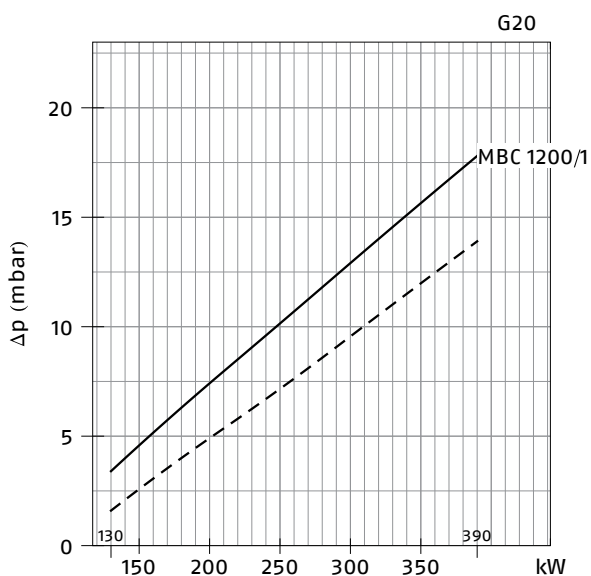
The diagrams indicate the minimum pressure drop of the burners with the various gas trains that can be matched with them; at the value of these pressure drop add the combustion chamber pressure. The value thus calculated represents the minimum required input pressure to the gas train.

The minimum input gas pressure required is 15 mbar while burner operating. In particular, the pressure difference between gas train upstream and downstream has to remain always over pressure drop values indicated below.

RS 34 (NATURAL GAS)

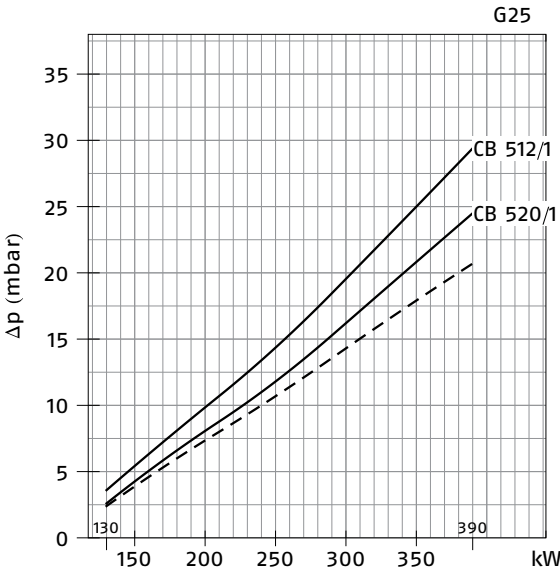
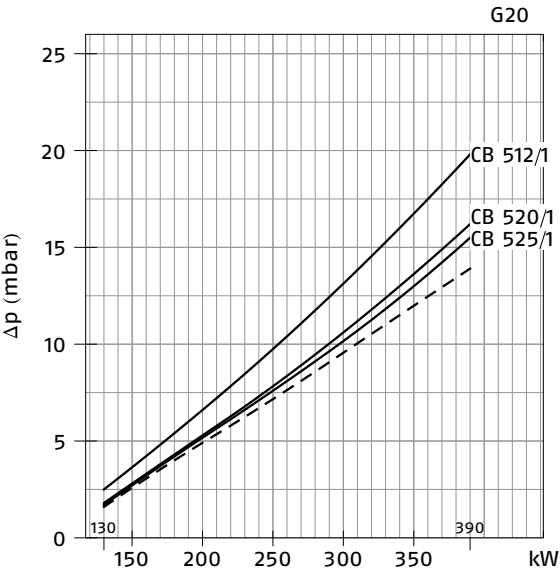


RS 34 (NATURAL GAS)

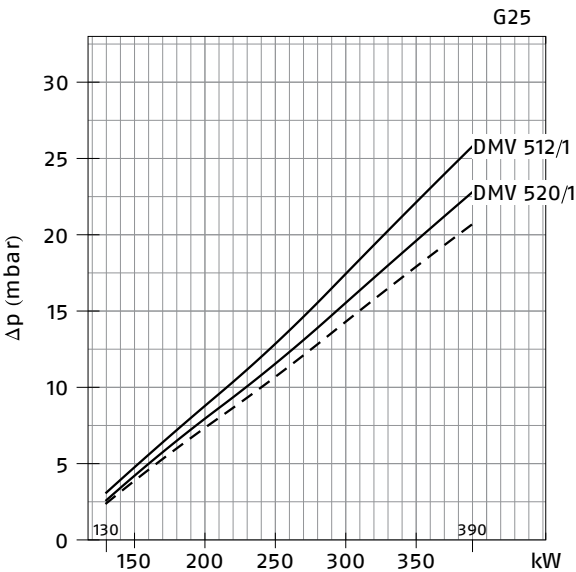
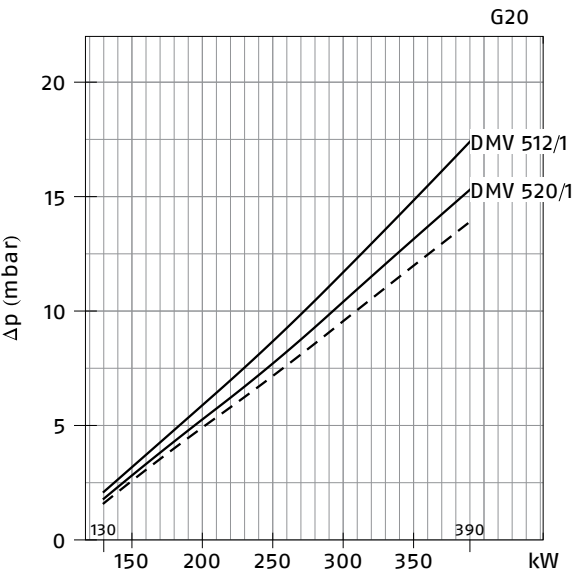


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 34 (NATURAL GAS)

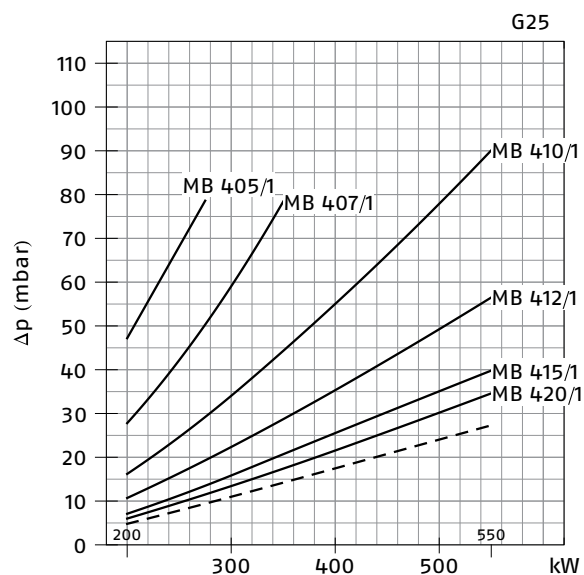
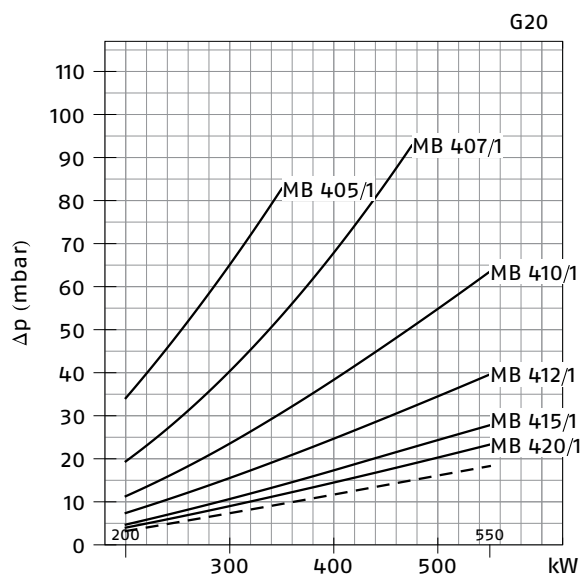


RS 34 (NATURAL GAS)

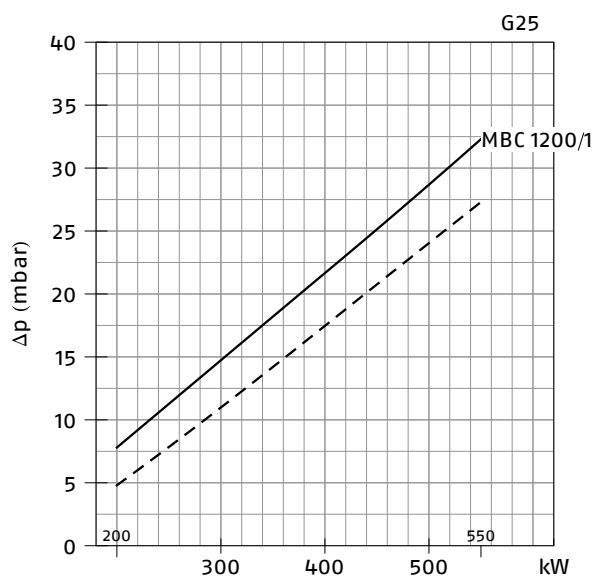
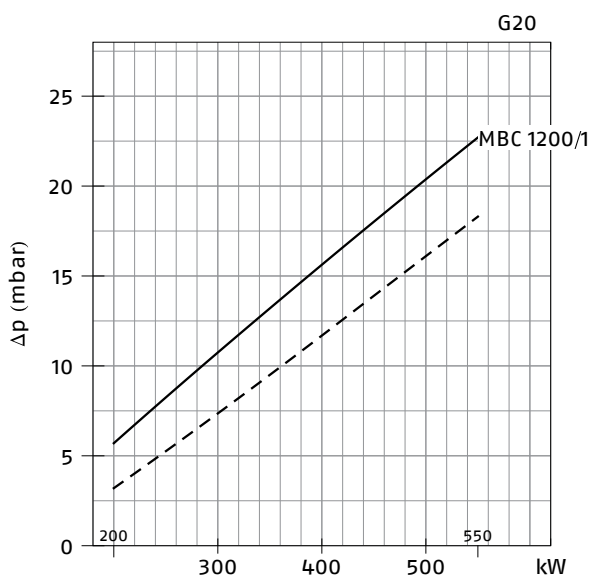


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 44 (NATURAL GAS)

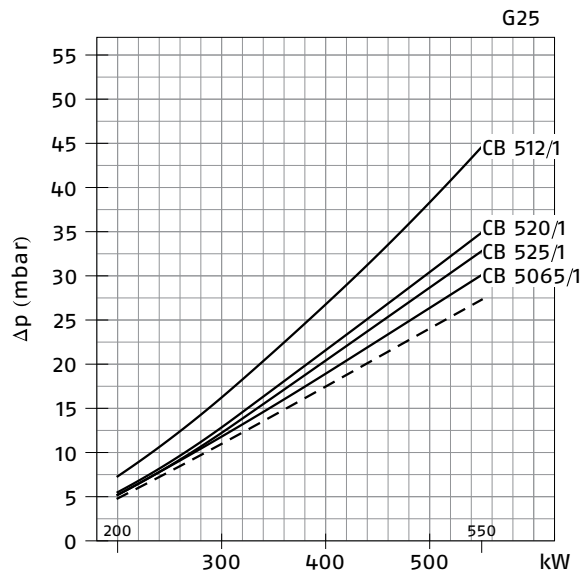
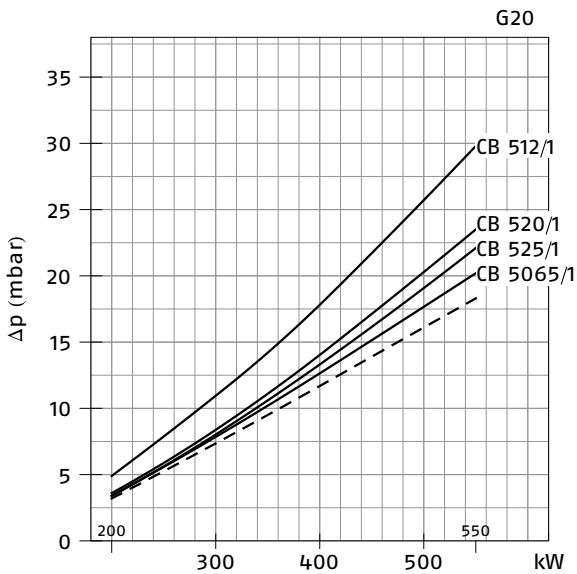


RS 44 (NATURAL GAS)

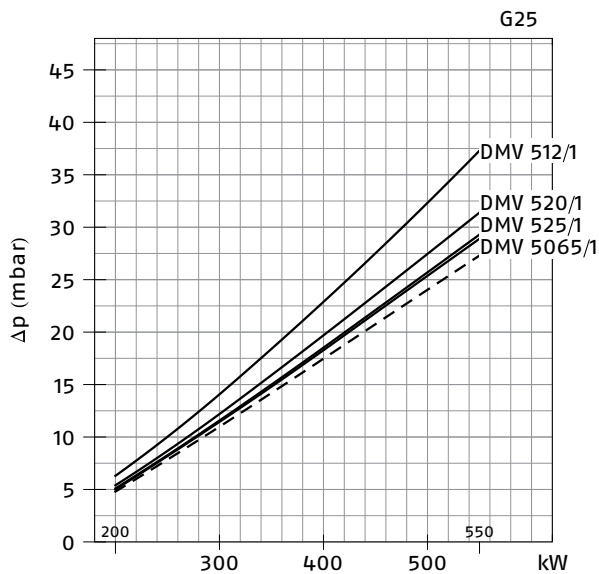
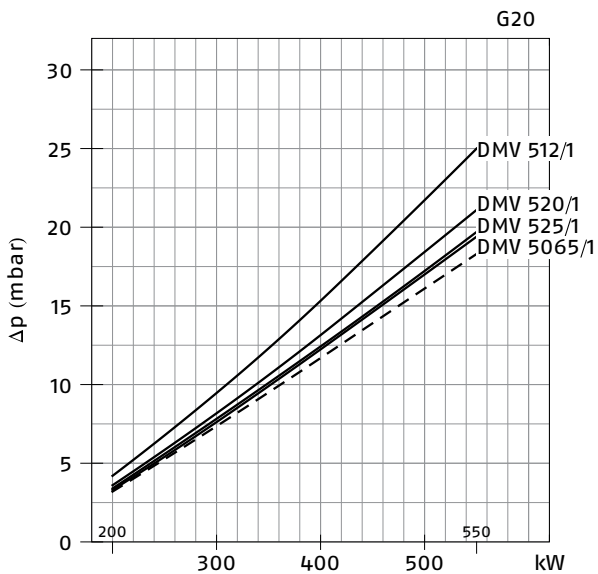


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 44 (NATURAL GAS)

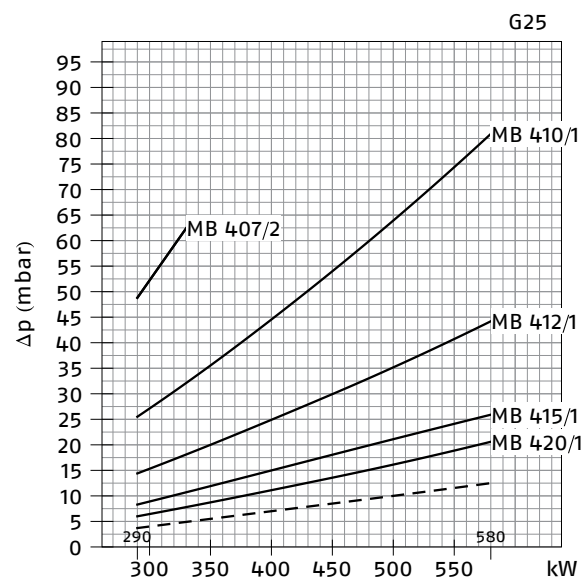
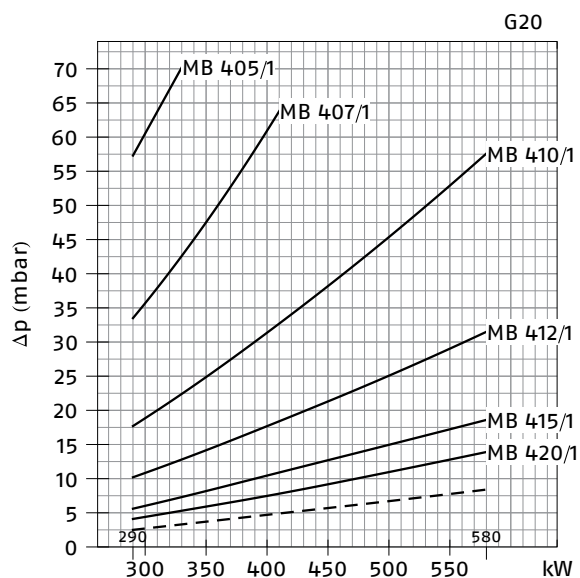


RS 44 (NATURAL GAS)

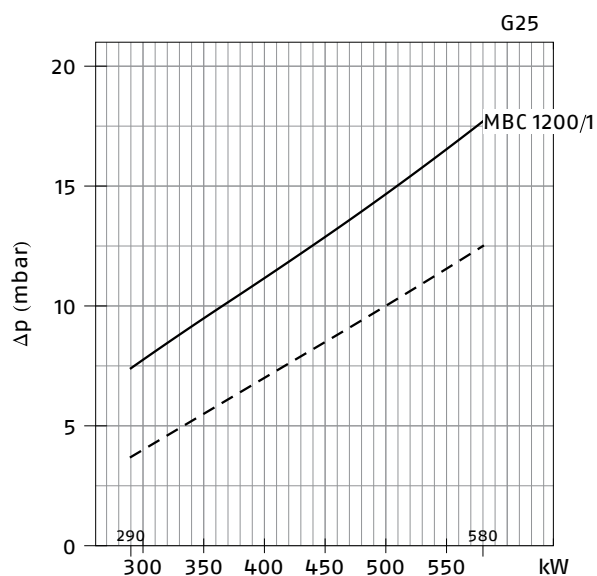
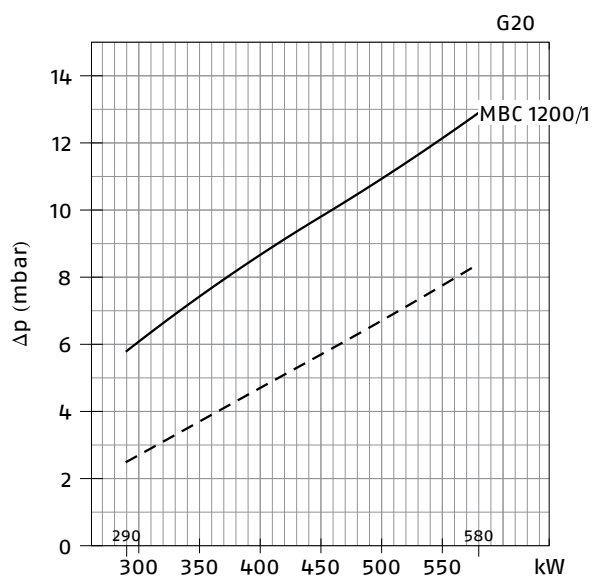


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 50 (NATURAL GAS)

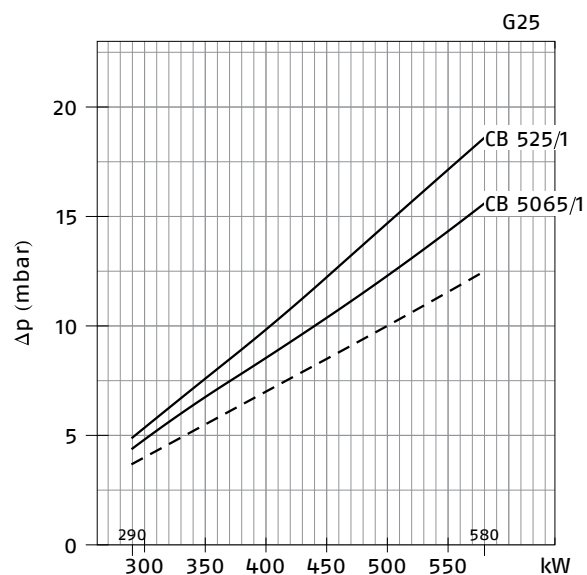
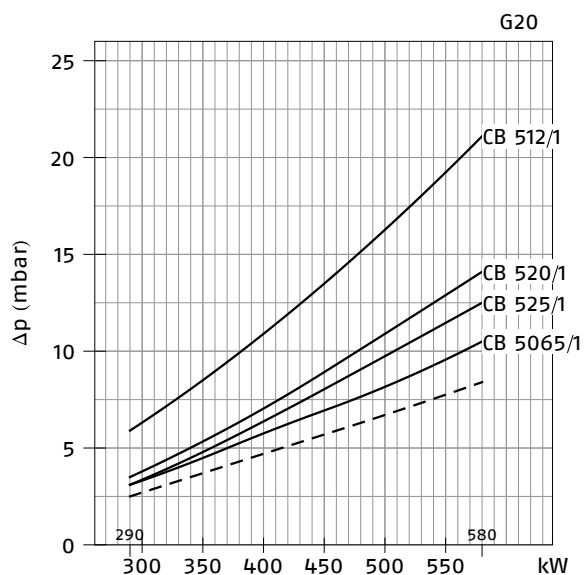


RS 50 (NATURAL GAS)

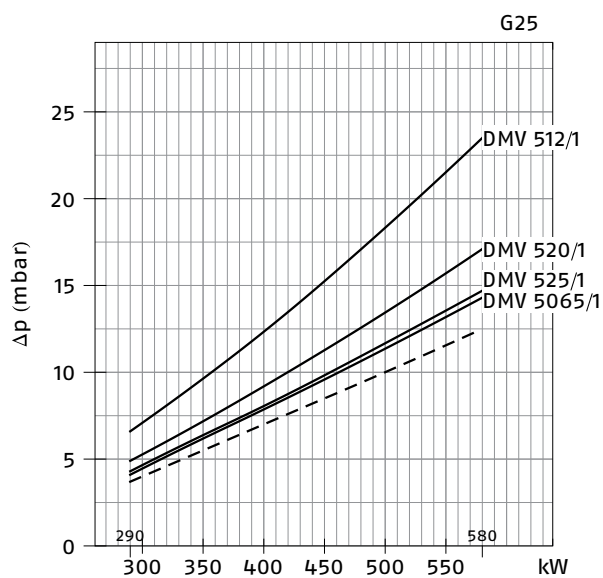
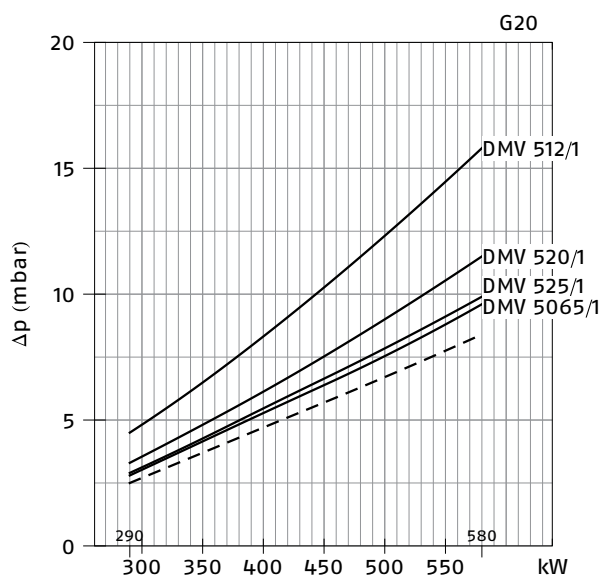


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 50 (NATURAL GAS)

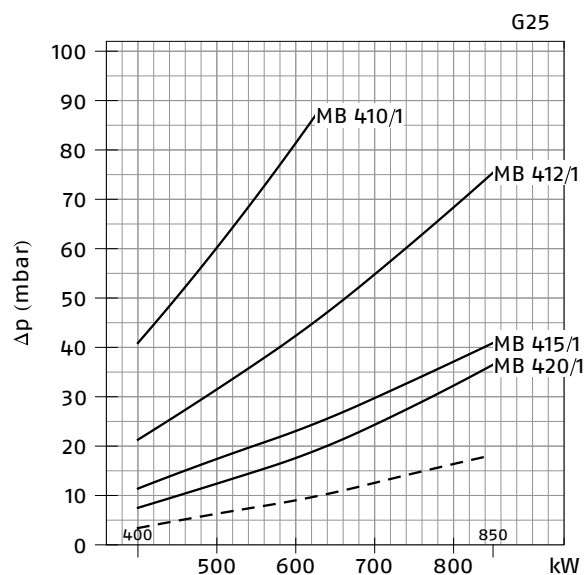
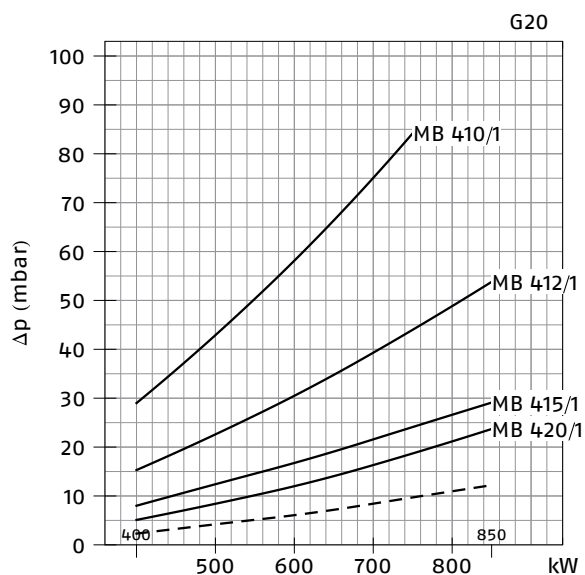


RS 50 (NATURAL GAS)

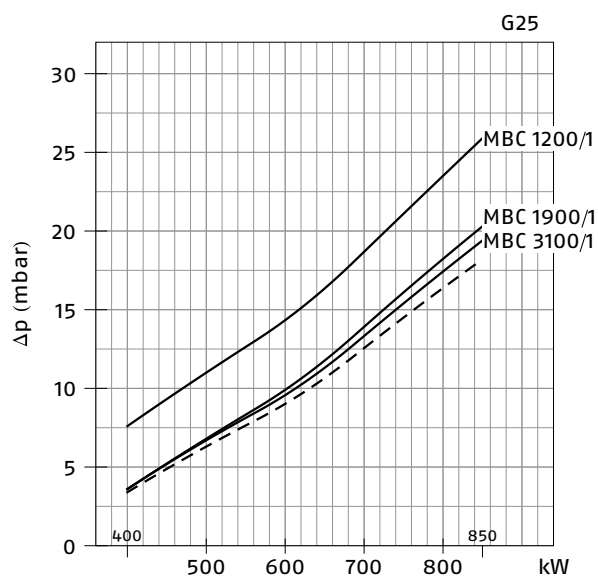
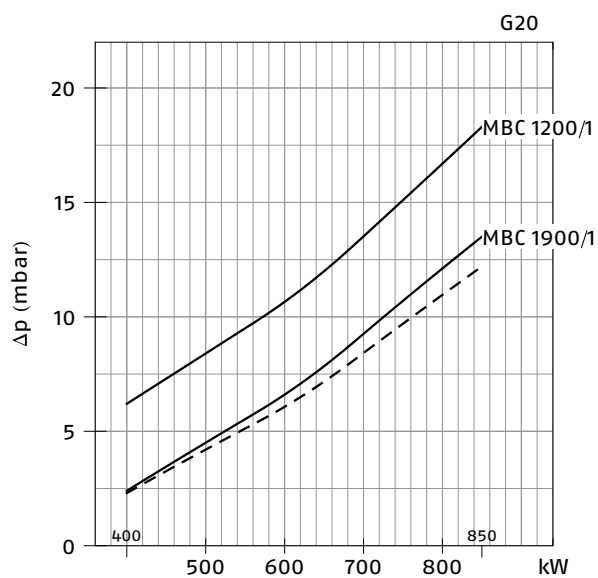


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 64 (NATURAL GAS)

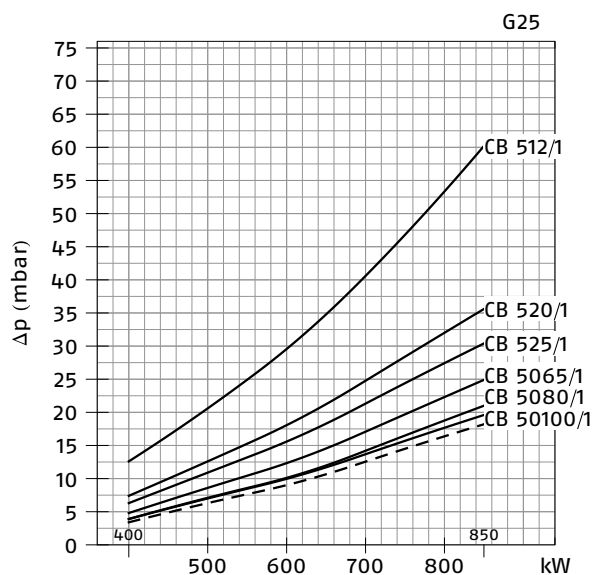
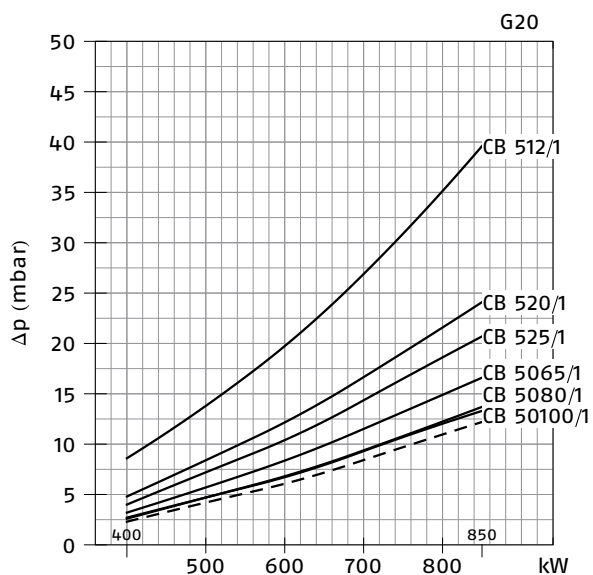


RS 64 (NATURAL GAS)

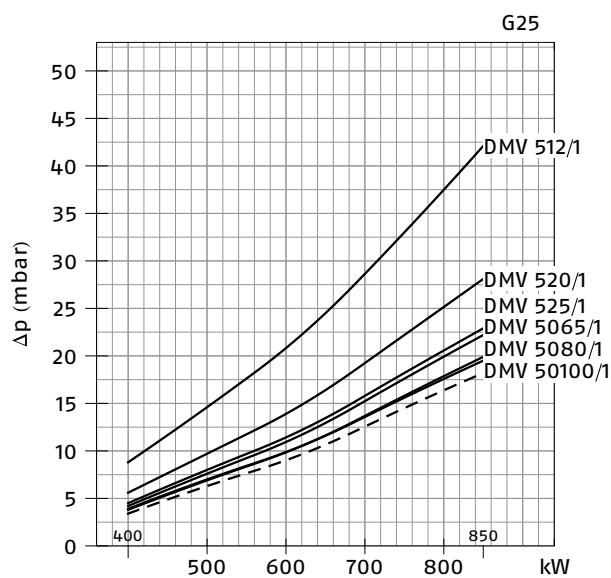
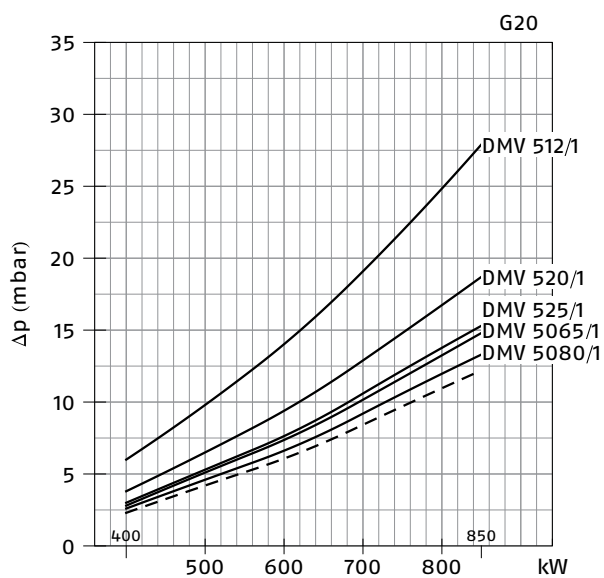


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 64 (NATURAL GAS)

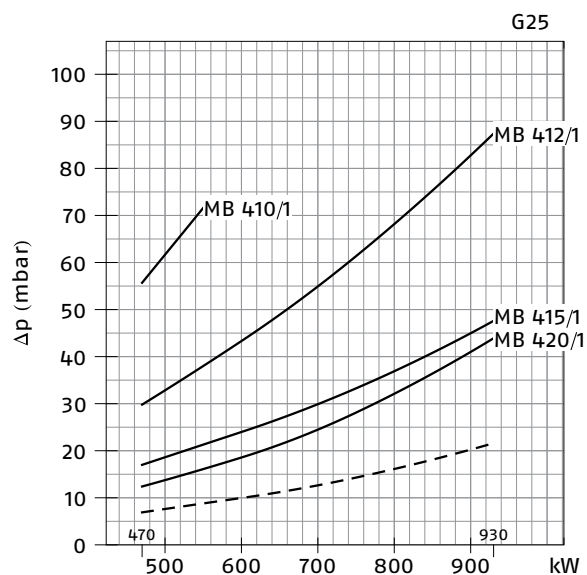
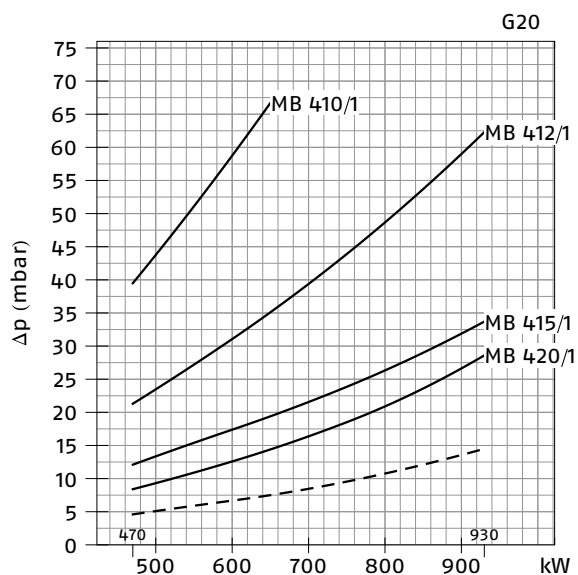


RS 64 (NATURAL GAS)

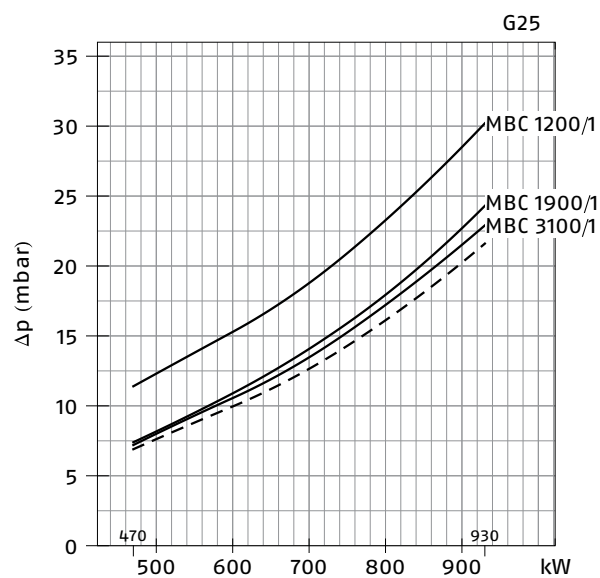
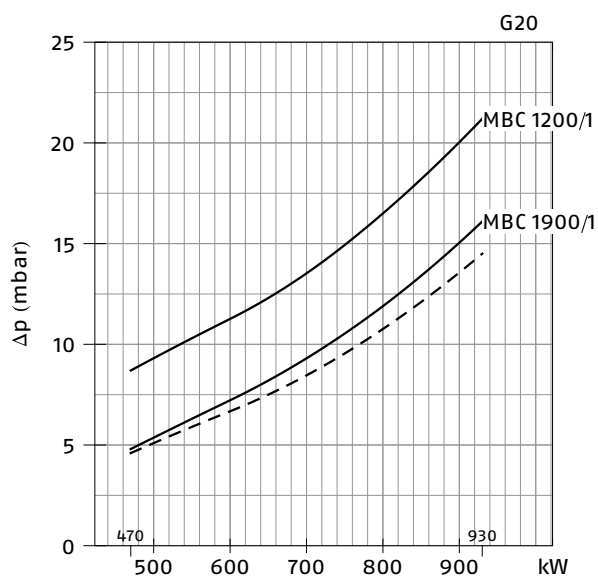


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 70 (NATURAL GAS)

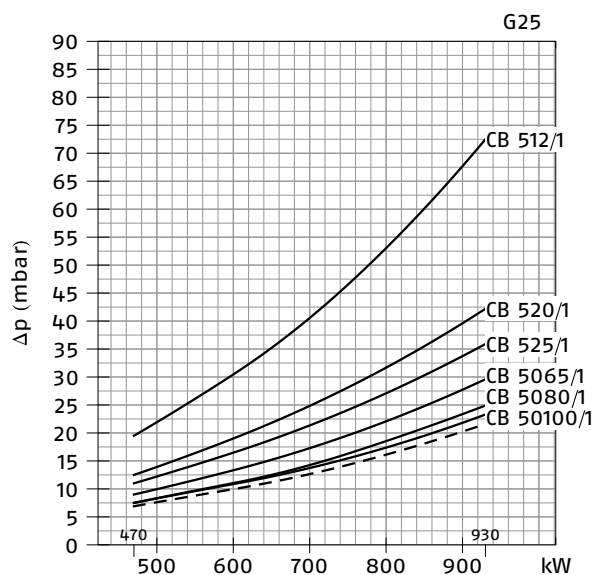
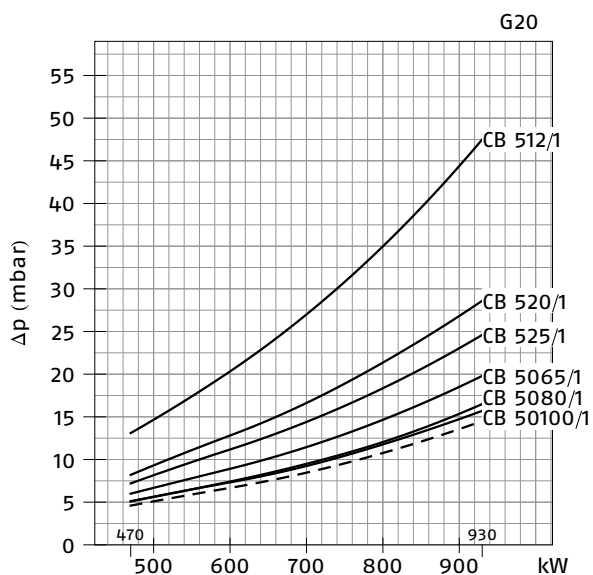


RS 70 (NATURAL GAS)

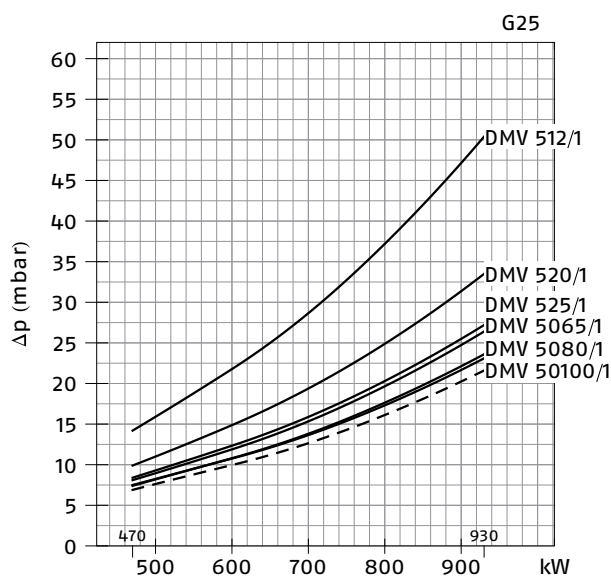
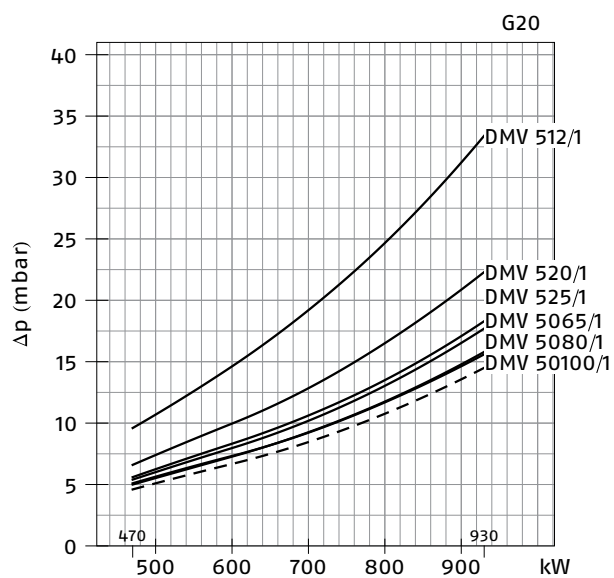


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 70 (NATURAL GAS)

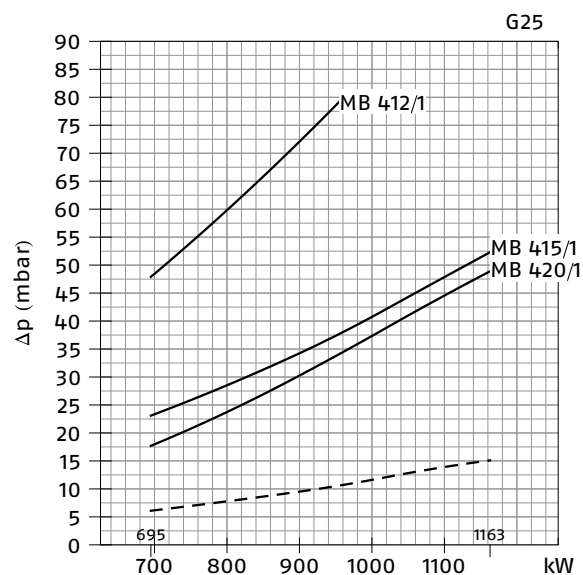
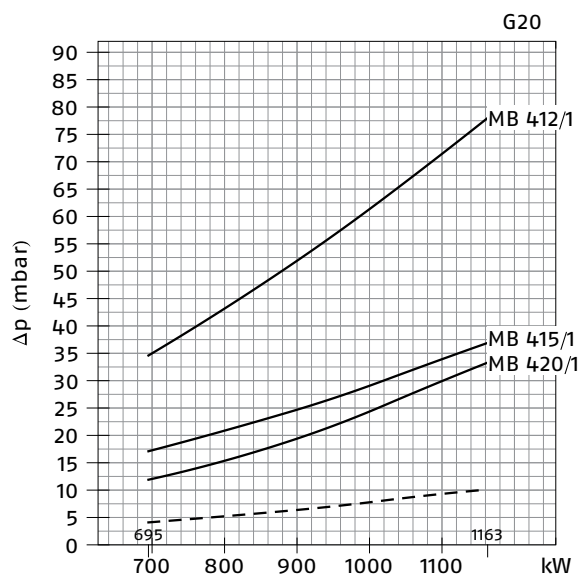


RS 70 (NATURAL GAS)

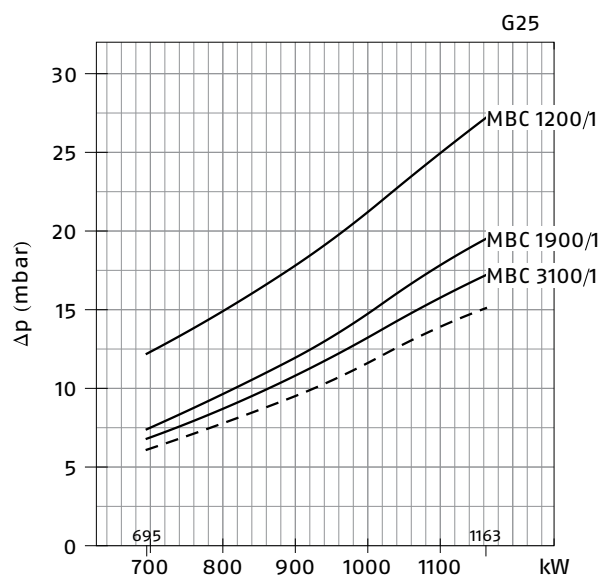
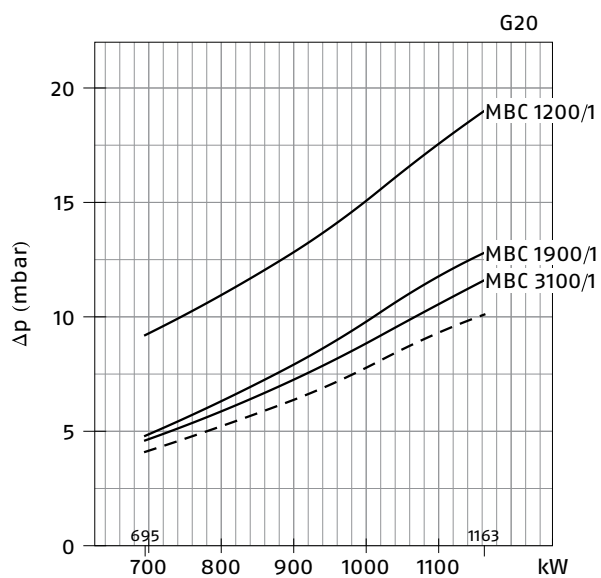


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 100 (NATURAL GAS)

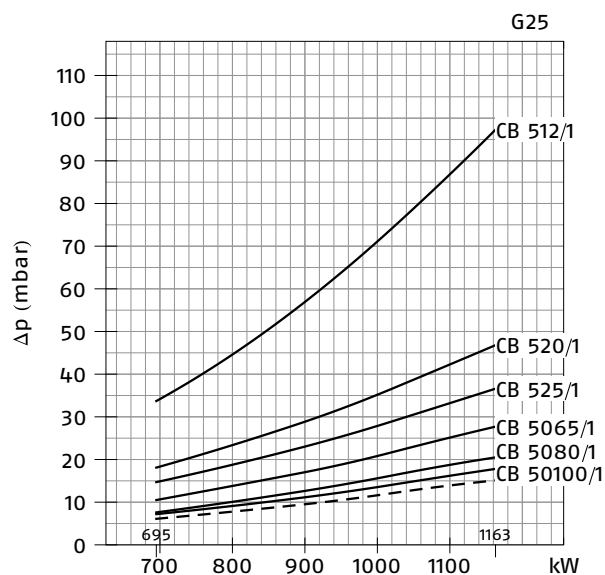
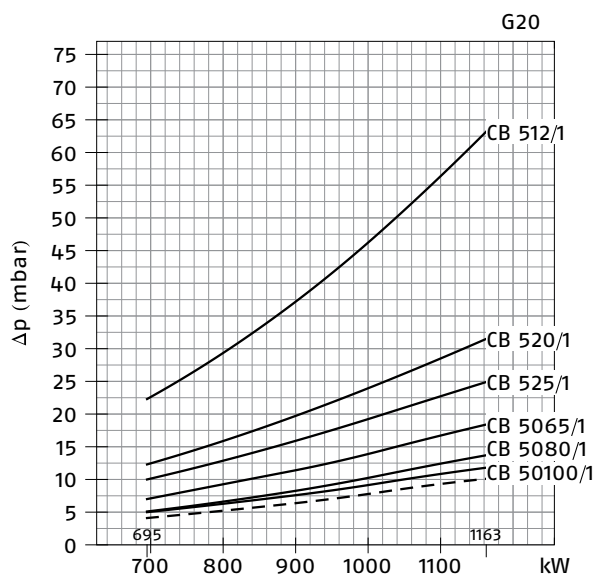


RS 100 (NATURAL GAS)

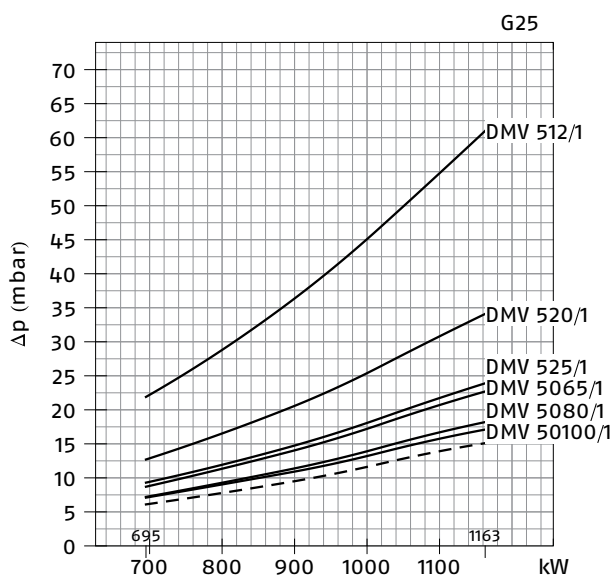
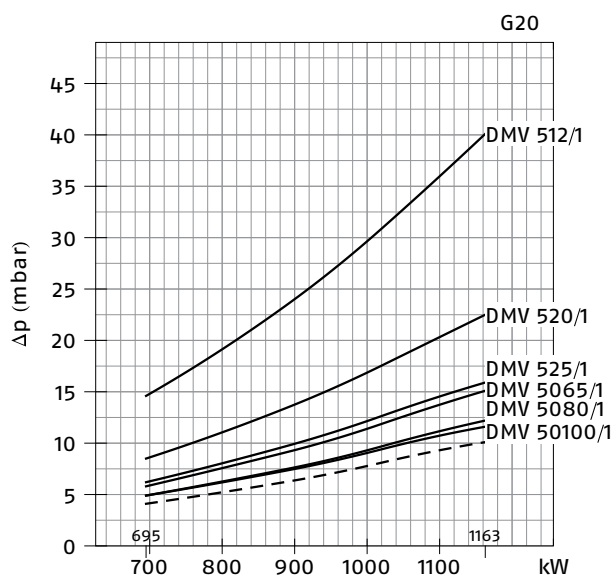


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 100 (NATURAL GAS)

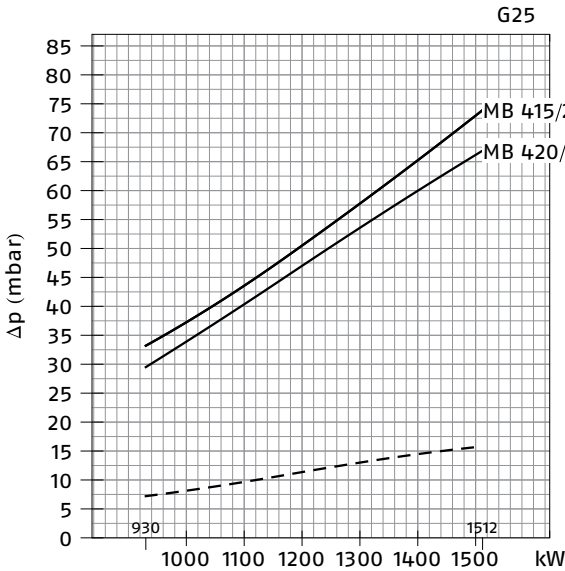
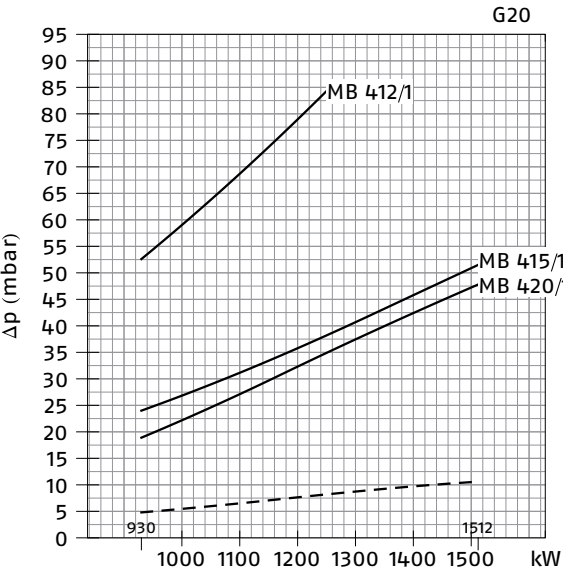


RS 100 (NATURAL GAS)

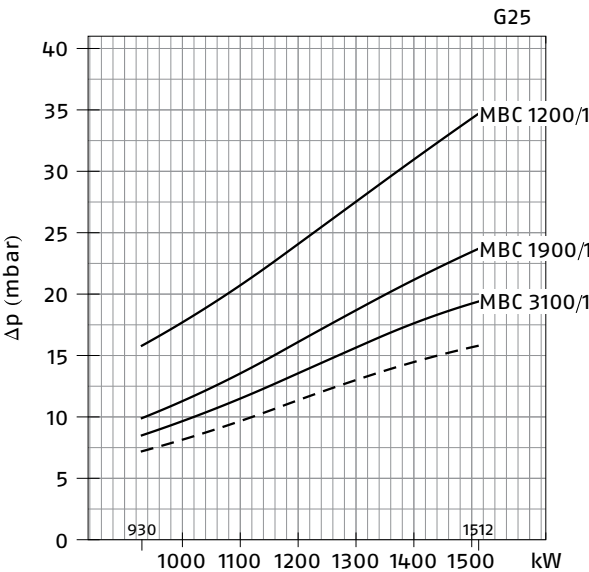
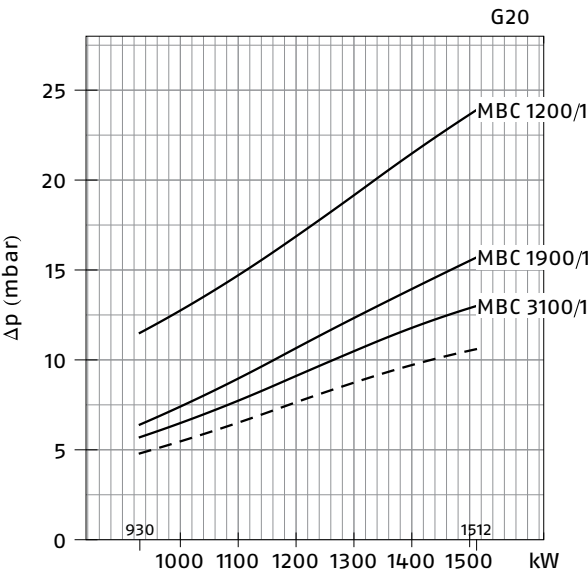


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 130 (NATURAL GAS)

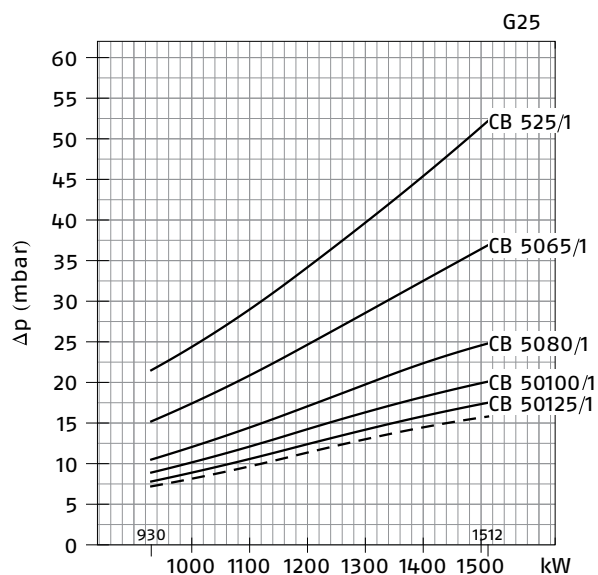
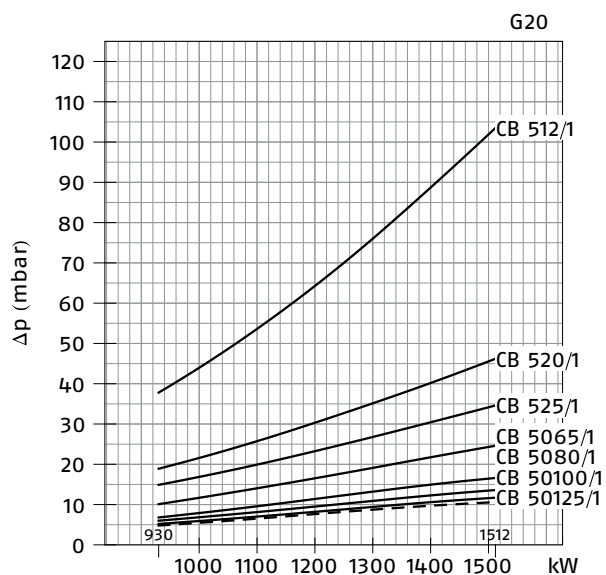


RS 130 (NATURAL GAS)

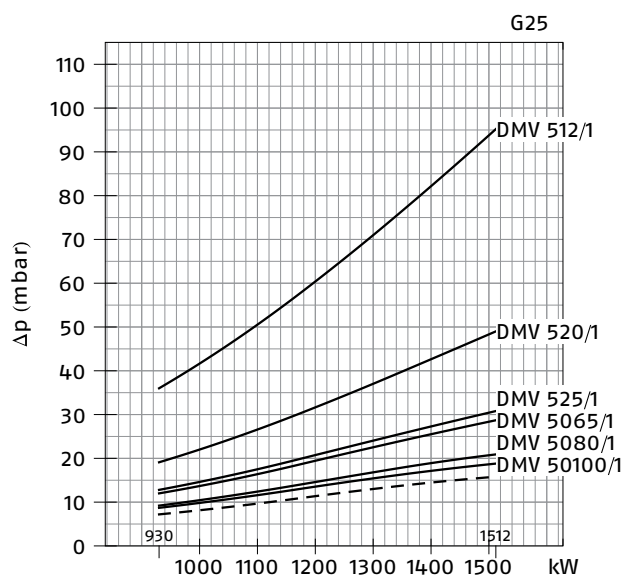
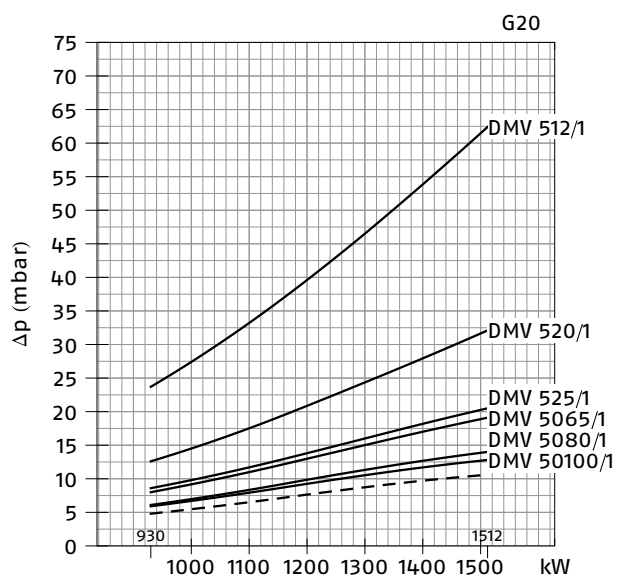


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 130 (NATURAL GAS)

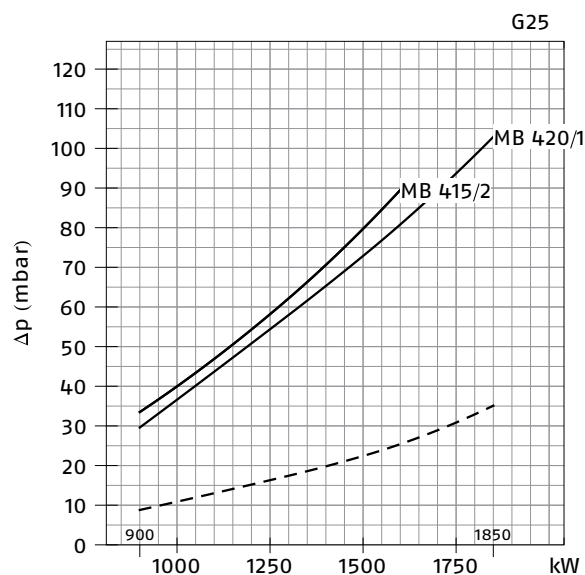
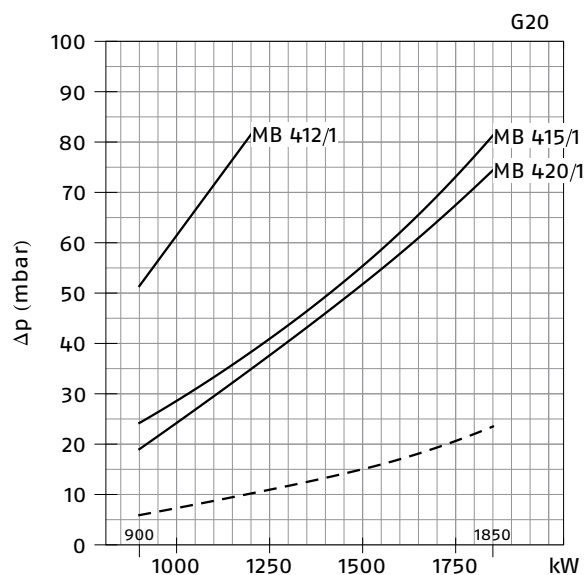


RS 130 (NATURAL GAS)

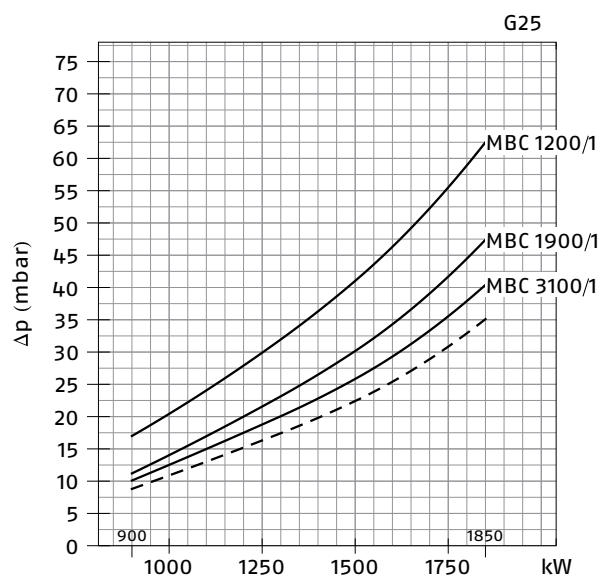
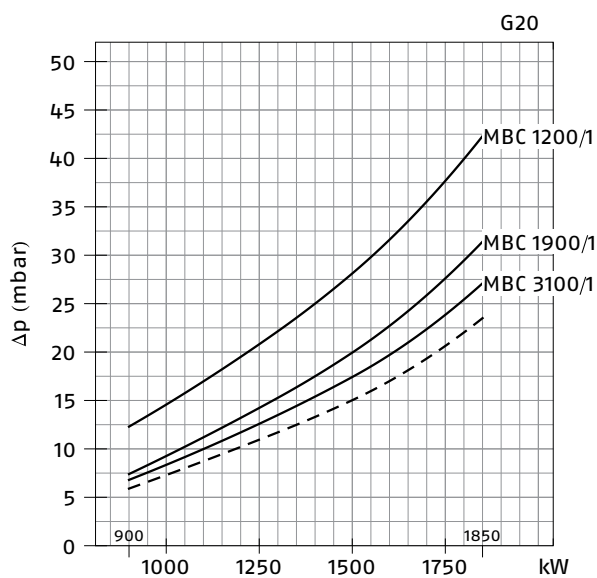


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 150 (NATURAL GAS)

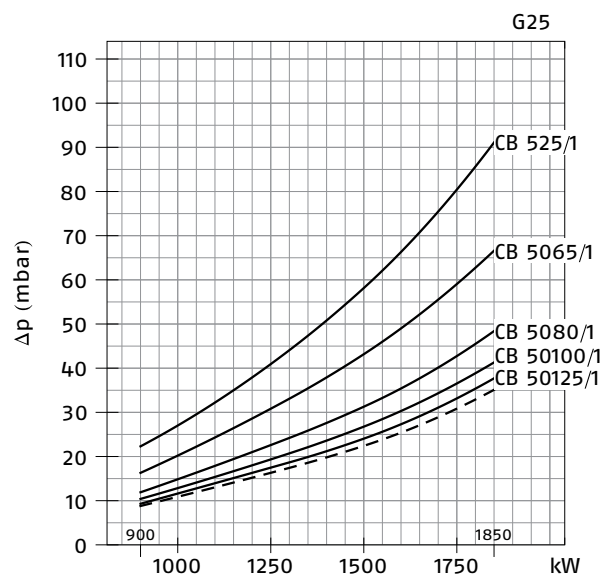
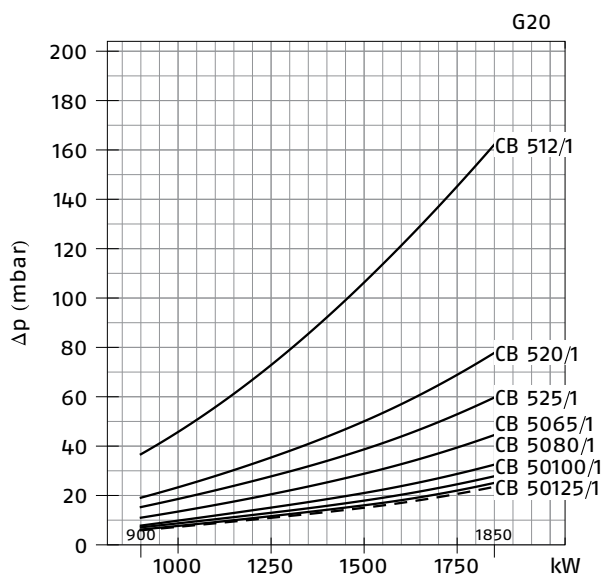


RS 150 (NATURAL GAS)

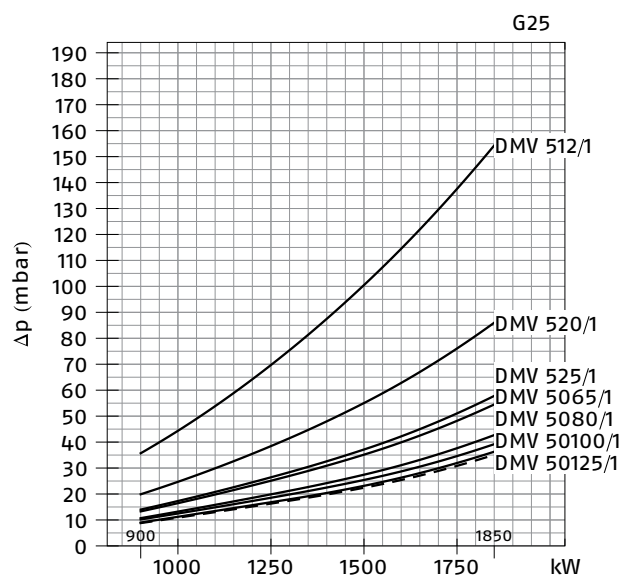
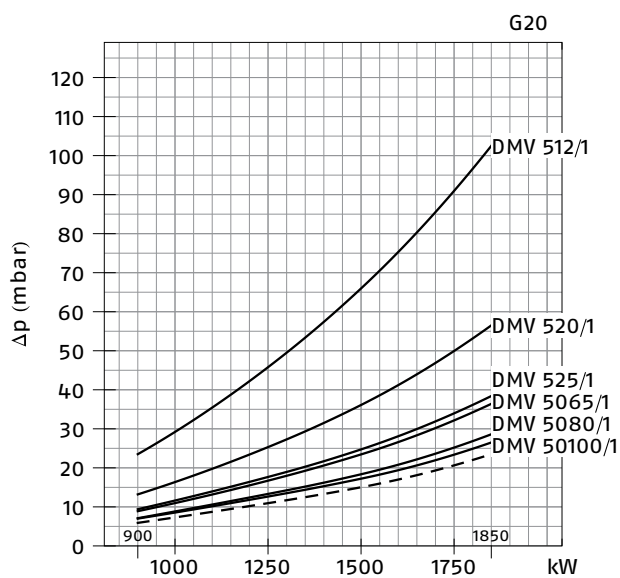


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 150 (NATURAL GAS)

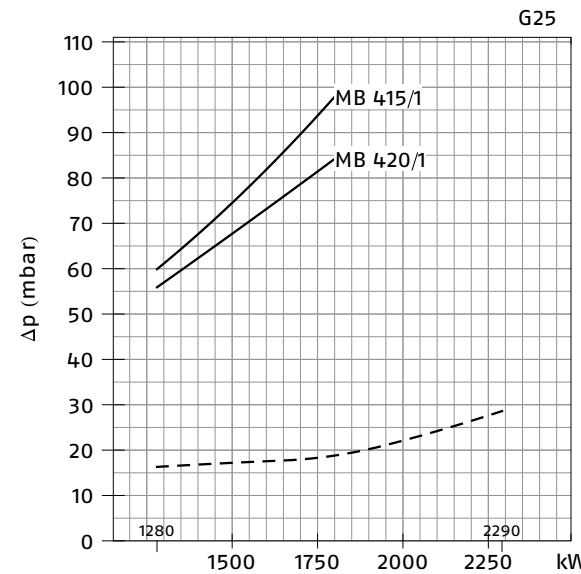
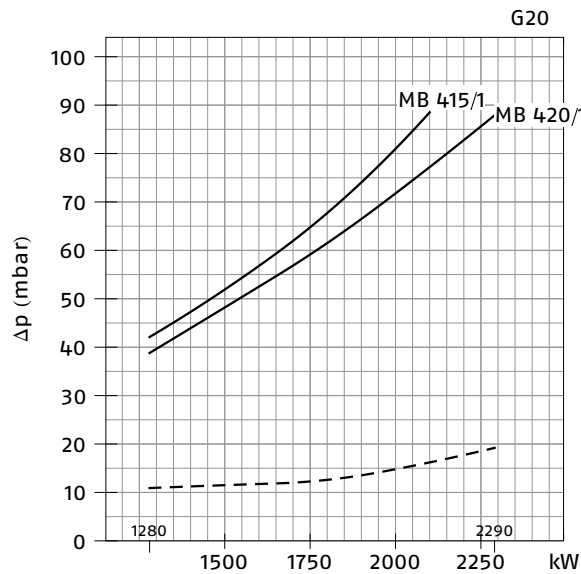


RS 150 (NATURAL GAS)

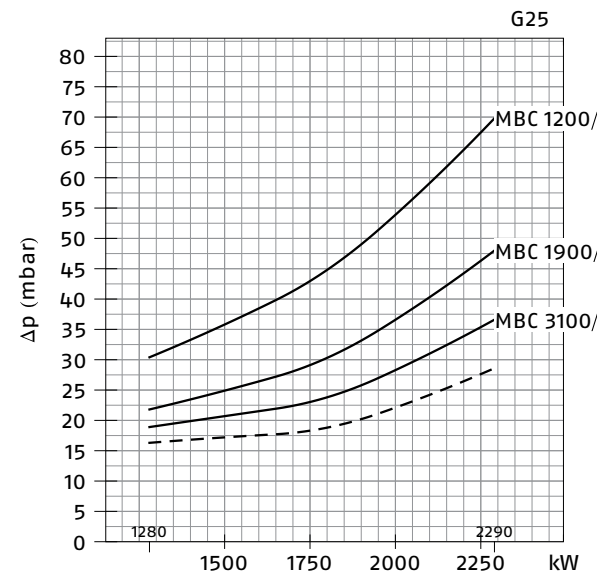
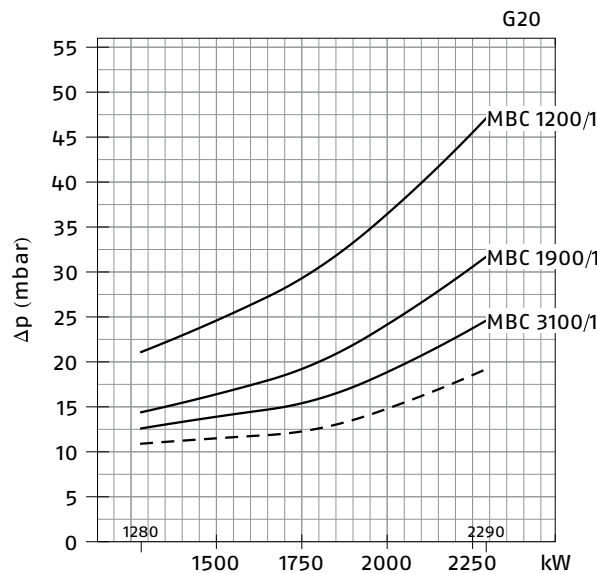


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 190 (NATURAL GAS)

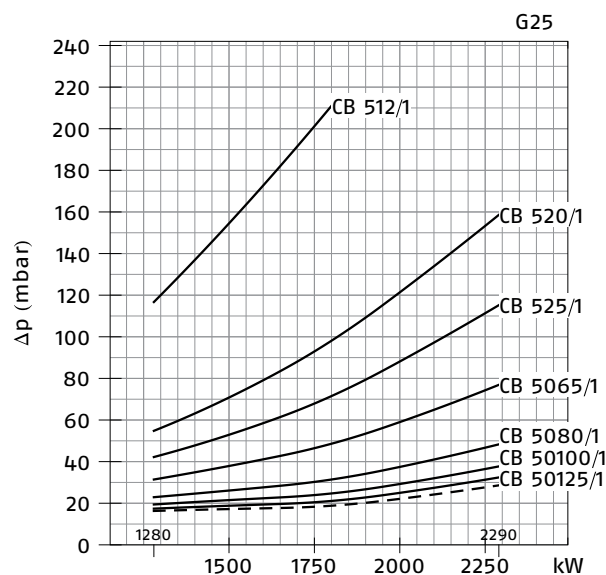
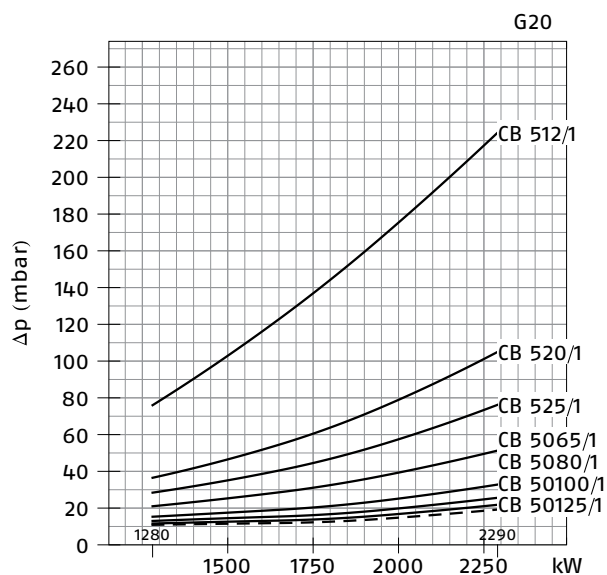


RS 190 (NATURAL GAS)

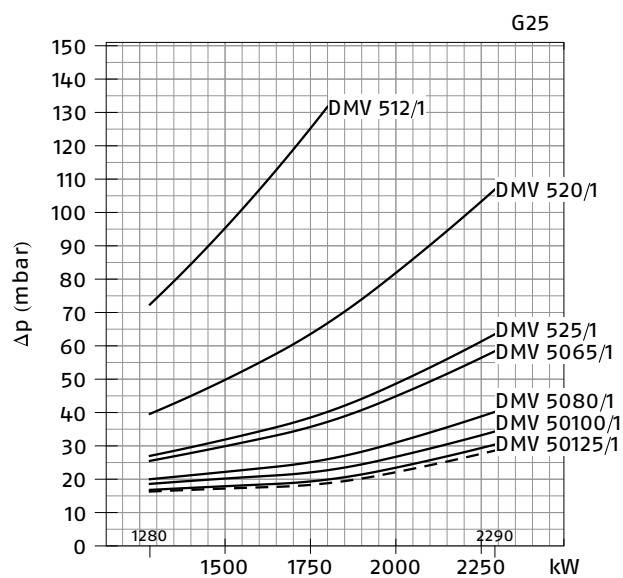
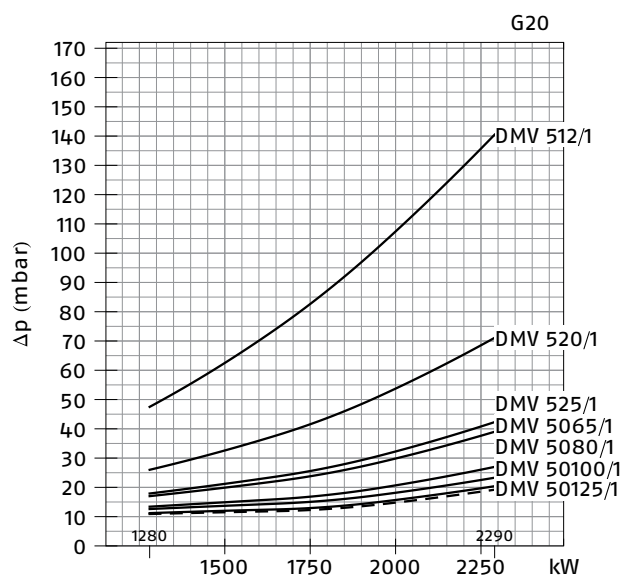


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 190 (NATURAL GAS)



RS 190 (NATURAL GAS)



— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

GAS TRAIN		ADAPTER (1)													
CODE	MODEL	RS 34	RS 44-50	RS 64	RS 70	RS 100	RS 130	RS 150	RS 190						
3970500	MB 405/1 - RT 20	3000824		●	●	●	●	●	●						
3970553	MB 407/1 - RT 20			●	●	●	●	●	●						
3970599	MB 407/1 - RT 52			●	●	●	●	●	●						
3970229	MB 407/1 - RSM 20			●	●	●	●	●	●						
3970258	MB 410/1 - RT 52	3010124		3000843		●	●	●	●						
3970554	MB 410/1 - RT 20	3000824		3000824 + 3000843		●	●	●	●						
3970600	MB 410/1 - RT 52					●	●	●	●						
3970230	MB 410/1 - RSM 20					●	●	●	●						
3970256	MB 412/1 - RT 52	-	-	3000843											
3970144	MB 412/1 - RT 20	-	-												
3970197	MB 412/1 CT RT 20	-	-												
3970231	MB 412/1 - RSM 20	-	-												
3970180	MB 415/1 - RT 30	-	-												
3970198	MB 415/1 CT RT 30	-	-												
3970250	MB 415/1 - RT 52	-	-												
3970253	MB 415/1 CT RT 52	-	-												
3970232	MB 415/1 - RSM 30	-	-	3000822											
3970181	MB 420/1 - RT 30	3000822								-	-	-	-	-	-
3970182	MB 420/1 CT RT 30									-	-	-	-	-	-
3970257	MB 420/1 - RT 52									-	-	-	-	-	-
3970252	MB 420/1 CT RT 52									-	-	-	-	-	-
3970233	MB 420/1 - RSM 30									-	-	-	-	-	-
3970234	MB 420/1 CT RSM 30									-	-	-	-	-	-
3970221	MBC 1200/1 - RSM 60									-	-	-	-	-	-
3970225	MBC 1200/1 CT RSM 60			-	-	-	-	-	-						
3970222	MBC 1900/1 - FSM 40	●	●	3000825											
3970226	MBC 1900/1 CT FSM 40	●	●												
3970223	MBC 3100/1 - FSM 40	●	●	3000826											
3970227	MBC 3100/1 CT FSM 40	●	●												
3970145	CB 512/1 - RSM 30	-	-	3000843											
20045589	CB 512/1 CT RSM 30	-	-												
3970146	CB 520/1 - RSM 30	3000822		-	-	-	-	-	-						
3970160	CB 520/1 CT RSM 30			-	-	-	-	-	-						
20044659	CB 525/1 - RSM 30			-	-	-	-	-	-						
20044660	CB 525/1 CT RSM 30			-	-	-	-	-	-						
3970147	CB 5065/1 - FSM 30	●	3000825												
3970161	CB 5065/1 CT FSM 30	●													
3970148	CB 5080/1 - FSM 30	●	●	3000826											
3970162	CB 5080/1 CT FSM 30	●	●												
3970149	CB 50100/1 - FSM 30	●	●	3010370 + 3000826											
3970163	CB 50100/1 CT FSM 30	●	●												
20015871	CB 50125/1 - FSM 30	●	●	●	●	●	3010224 + 3000826								
3970196	CB 50125/1 CT FSM 30	●	●	●	●	●									

Key to layout

(1) Adaptor connector for gas train/burner:

The code indicates the adapter needed to connect the gas train to the burner.

- Additional adapter not necessary, the gas train may be connected directly to the burner
- Combiantion gas train/burner not available

GAS TRAIN		ADAPTER (1)							
CODE	MODEL	RS 34	RS 44-50	RS 64	RS 70	RS 100	RS 130	RS 150	RS 190
20043035	DMV 512/1 - RSM -0	-	-	3000843					
20043036	DMV 512/1 CT RSM -0	-	-						
20043037	DMV 512/1 CQ RSM -2	-	-						
20043038	DMV 520/1 - RSM -0	3000822		-	-	-	-	-	-
20043039	DMV 520/1 CT RSM -0			-	-	-	-	-	-
20043040	DMV 520/1 CQ RSM -2			-	-	-	-	-	-
20043053	DMV 525/1 - RSM -0			-	-	-	-	-	-
20043054	DMV 525/1 CT RSM -0			-	-	-	-	-	-
20043055	DMV 525/1 CQ RSM -2			-	-	-	-	-	-
20043041	DMV 5065/1 - FSM -0	●	3000825						
20043042	DMV 5065/1 CT FSM -0	●							
20043043	DMV 5065/1 CQ FSM -2	●							
20043044	DMV 5080/1 - FSM -0	●	●	3000826					
20043045	DMV 5080/1 CT FSM -0	●	●						
20043046	DMV 5080/1 CQ FSM -2	●	●						
20043047	DMV 50100/1 - FSM -0	●	●	3010370 + 3000826					
20043048	DMV 50100/1 CT FSM -0	●	●						
20043049	DMV 50100/1 CQ FSM -2	●	●						
20043050	DMV 50125/1 - FSM -0	●	●	●	●	●	3010224 + 3000826		
20043051	DMV 50125/1 CT FSM -0	●	●	●	●	●			
20043052	DMV 50125/1 CQ FSM -2	●	●	●	●	●			

Key to layout

(1) Adaptor connector for gas train/burner:

The code indicates the adapter needed to connect the gas train to the burner.

- Additional adapter not necessary, the gas train may be connected directly to the burner
- Combiantion gas train/burner not available

Ventilation

The ventilation circuit produces low noise levels with high performance pressure and air output, inspite of the compact dimensions.

The use of sound-proofing material keeps noise level very low.

A variable profile cam connects the fuel and air regulations, to obtain a perfect control of combustion during the change of stage. When the burner is not operating the servomotor closes completely the air damper to reduce heat dispersion from the boiler. A minimum air pressure switch stops the burner when there is an insufficient quantity of air at the combustion head.

The RS 34 MZ and RS 44 MZ are realised with a new structure made by an innovative technology based on a new fibreglass reinforced polyamide material, with high thermal and mechanical characteristics, instead of the traditional aluminium.

This allows big advantages in terms of lay-out rationalisation, weight and dimensions reduction.

In order to guarantee the correct exercise temperature for the internal burner components in every working conditions, the new structure includes an innovative patented cooling technology.

Between the burner front base and the reinforcing steel front plate, had been create an air cavity offering an high thermal insulation against the front boiler reflection heat, and to further improve the insulation efficiency the innovative HCS (Housing Cooling System) technology had been developed. Inside the front base cavity an air circulation is activated with continuous air volume refresh to obtain an active cooling system and avoid any heat transfer to the electrical component housing.



Example of HCS (Housing Cooling System) working concept.

Combustion Head

Different lengths of the combustion head can be chosen for the RS series of burners.

The choice depends on the thickness of the front panel and the type of boiler.

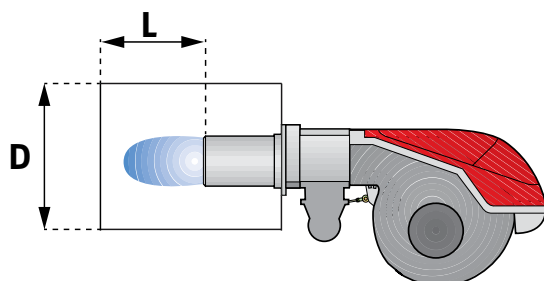
Depending on the type of generator, check that the penetration of the head into the combustion chamber is correct.

The internal positioning of the combustion head can easily be adjusted to the maximum defined output by adjusting a screw fixed to the flange.



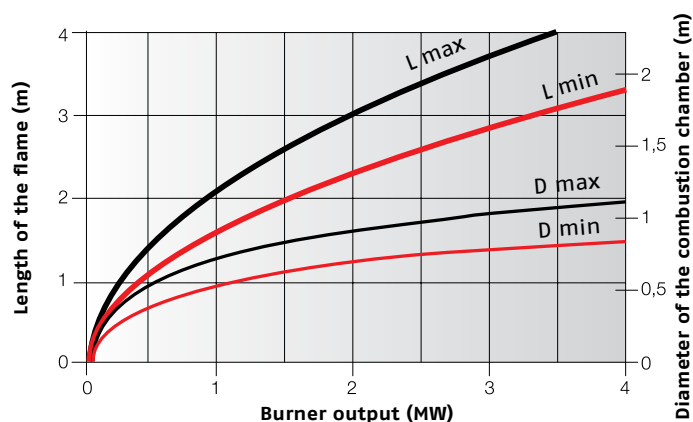
Example of a RS burner combustion head.

SUGGESTED COMBUSTION CHAMBER DIMENSIONS



Example:

Burner thermal output = 2000 kW;
L Combustion Chamber (m) = 2,7 m (medium value);
D Combustion Chamber (m) = 0,8 m (medium value)

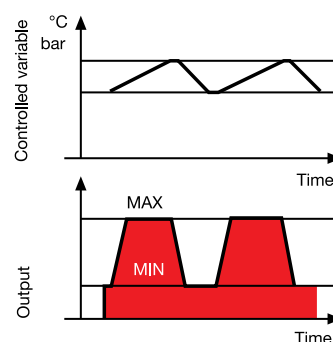


Operation

BURNER OPERATION MODE

On "two stage" operation, the burner gradually adapts the output to the requested level, by varying between two pre-set levels (see picture A).

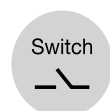
"TWO STAGE" OPERATION



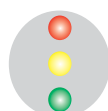
Picture A

All RS series burners are fitted with a new microprocessor control panel for the supervision during intermittent operation.

For helping the commissioning and maintenance work, there are two main elements:



The lock-out reset button is the central **operating element** for resetting the burner control and for activating / deactivating the diagnostic functions.



The multi-color LED is the central **indication element** for visual diagnosis and interface diagnosis.

Both elements are located under the transparent cover of lock-out reset button, as showed below.



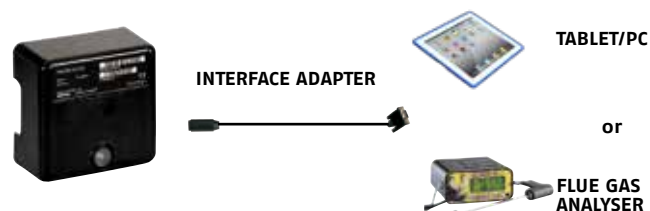
There are two diagnostic choices, for indication of operation and diagnosis of fault cause:

VISUAL DIAGNOSIS



INTERFACE DIAGNOSIS

By the interface adapter and a PC with dedicated software or by a predisposed flue gas analyzer (see paragraph accessories).



INDICATION OF OPERATION

In normal operation, the various status are indicated in the form of colour codes according to the table below.

The interface diagnosis (with adapter) can be activated by pressing the lock-out button for > 3 seconds.

COLOR CODE TABLE							
Operation status	Color code table						
Stand-by	●	●	●	●	●	●	●
Pre-purging	●	●	●	●	●	●	●
Ignition phase	●	●	●	●	●	●	●
Flame OK	●	●	●	●	●	●	●
Poor flame	●	●	●	●	●	●	●
Undervoltage, built-in fuse	●	●	●	●	●	●	●
Fault, alarm	●	●	●	●	●	●	●
Flame simulation	●	●	●	●	●	●	●

● LED off

DIAGNOSIS OF FAULT CAUSES

After lock-out has occurred, the red signal lamp is steady on. In this status, the visual fault diagnosis according to the error code table can be activated by pressing the lock-out reset button for > 3 seconds.

The interface diagnosis (with adapter) can be activated by pressing again the lock-out button for > 3 seconds.

The flashing of red LED are a signal with this sequence:
(e.g. signal with n° 3 flashes – faulty air pressure monitor)

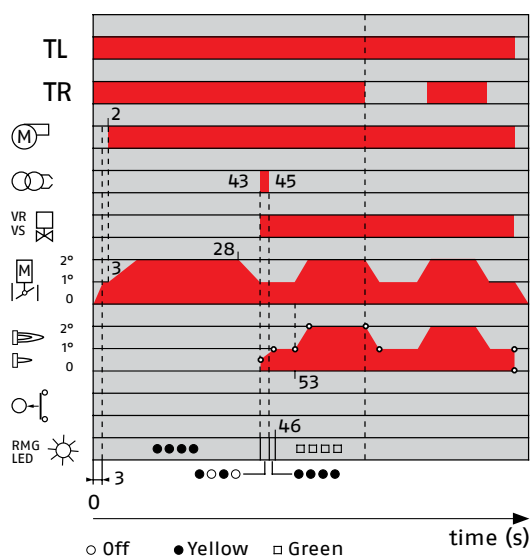


ERROR CODE TABLE

POSSIBLE CAUSE OF FAULT		FLASH CODE
No establishment of flame at the end of safety time:	- faulty or soiled fuel valves - faulty or soiled flame detector - poor adjustment of burner, no fuel - faulty ignition equipment	● 2x flashes
Faulty air pressure monitor		● 3x flashes
Extraneous light or simulation of flame on burner start up		● 4x flashes
Loss of flame during operation:	- faulty or soiled fuel valves - faulty or soiled flame detector - poor adjustment of burner	● 7x flashes
Wiring error or internal fault		● 10x flashes

START UP CYCLE

RS 34 MZ - 44 MZ - 50 - 64 MZ - 100 - 130 - 190



- 0 s The burner begins the firing cycle
- 2 s The motor starts: pre-purge phase
- 43 s Ignition electrode sparks; safety valve VS and adjustment valve VR open
- 45 s The spark goes out
- 53 s Output can be increased; start up cycle is concluded

Burner Wiring

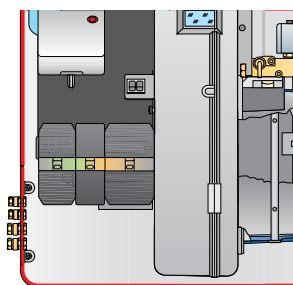
All models of the RS burner series have an easily accessible control panel for the electrical components housing and wiring.

In particular the RS 34-44 MZ models, thanks to the new structure concept, have a extremely clean electrical layout to optimise the commissioning and maintenance speed.

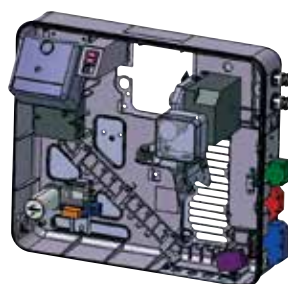
On these models the electrical connection are done by a Plug&Socket system, accessible from the external of the cover, and some of the main components as the servomotor, the air pressure switch and the gas max pressure switch (accessory) are connected to the burner electrical wiring trough plugs & sockets system in order to facilitate the connection in case of maintenance.

The electrical wiring of all RS burner models are very easy to do following the wiring diagrams included in the instruction handbook.

Electrical connections must be made by qualified and skilled personnel, according to the local norms.



Example of plugs and sockets for electrical connections for the RS 50 model.



Example of electrical components housing and Plug&Socket system for electrical connection of RS 34-44 MZ.



The following table shows the supply lead sections and the type of fuse to be used.

MODEL	V	F (A)	L (mm ²)
RS 34 MZ	230	T6	1.5
RS 44 MZ	230	T6	1.5
RS 44 MZ	230	T6	1.5
	400	T6	1.5
RS 50	230	T6	1.5
	400	T6	1.5
RS 64 MZ	230	T10	1.5
	400	T6	1.5

V = Electrical supply

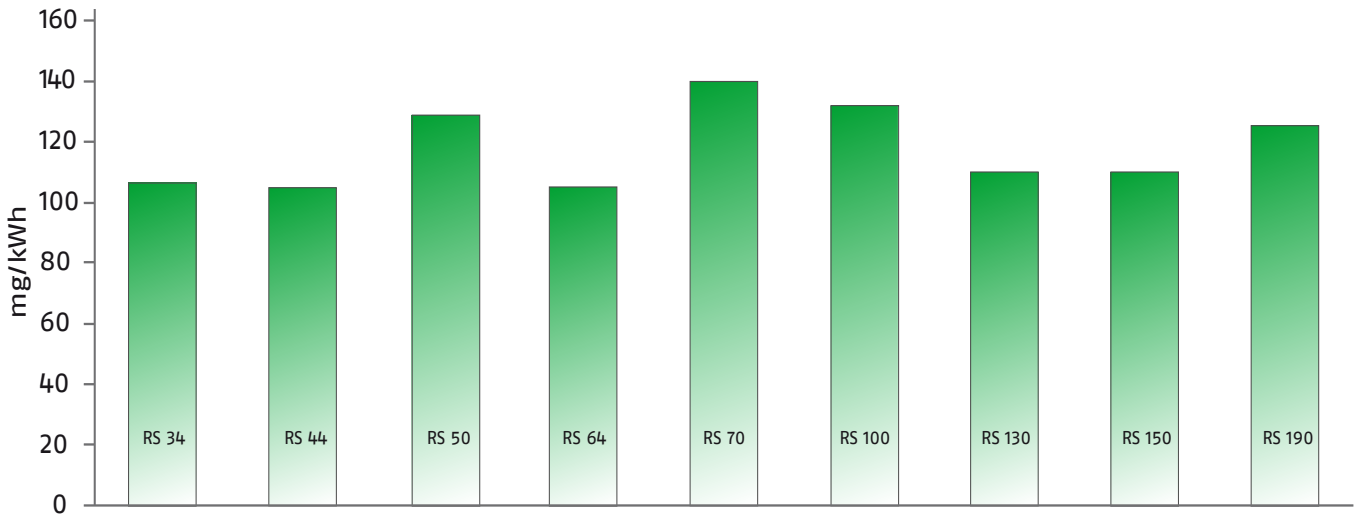
F = Fuse

L = Lead section

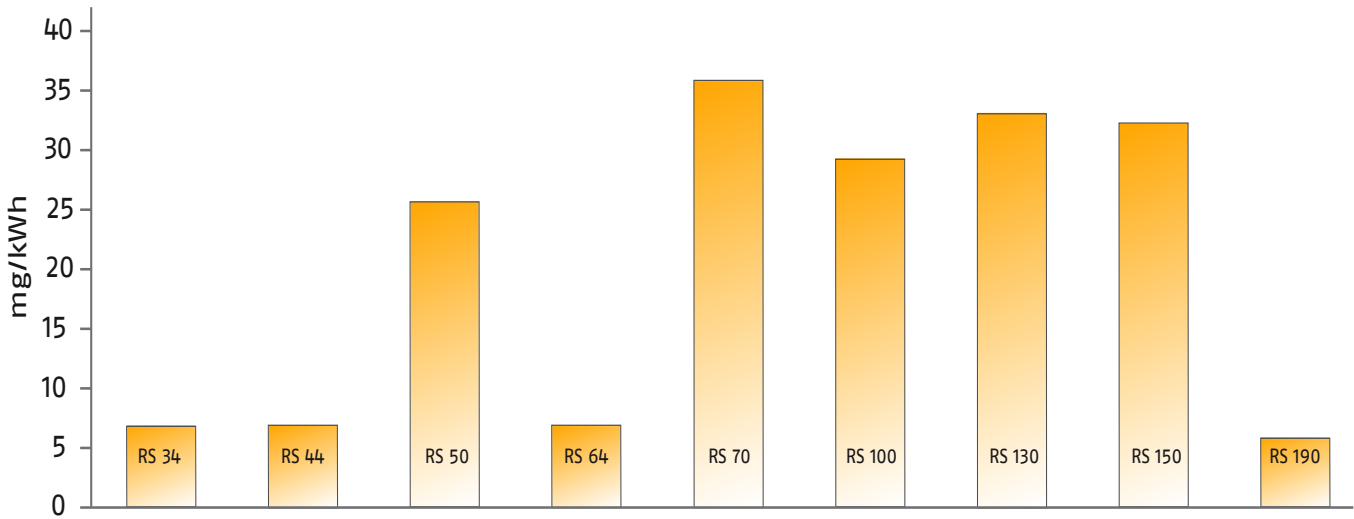
MODEL	V	F (A)	L (mm ²)
RS 70	230	T10	1.5
	400	T6	1.5
RS 100	230	T16	1.5
	400	T10	1.5
RS 130	230	T16	1.5
	400	T10	1.5
RS 150	230	T12	2.5
	400	T10	2.5
RS 190	230	T25	2.5
	400	T20	2.5

Emissions

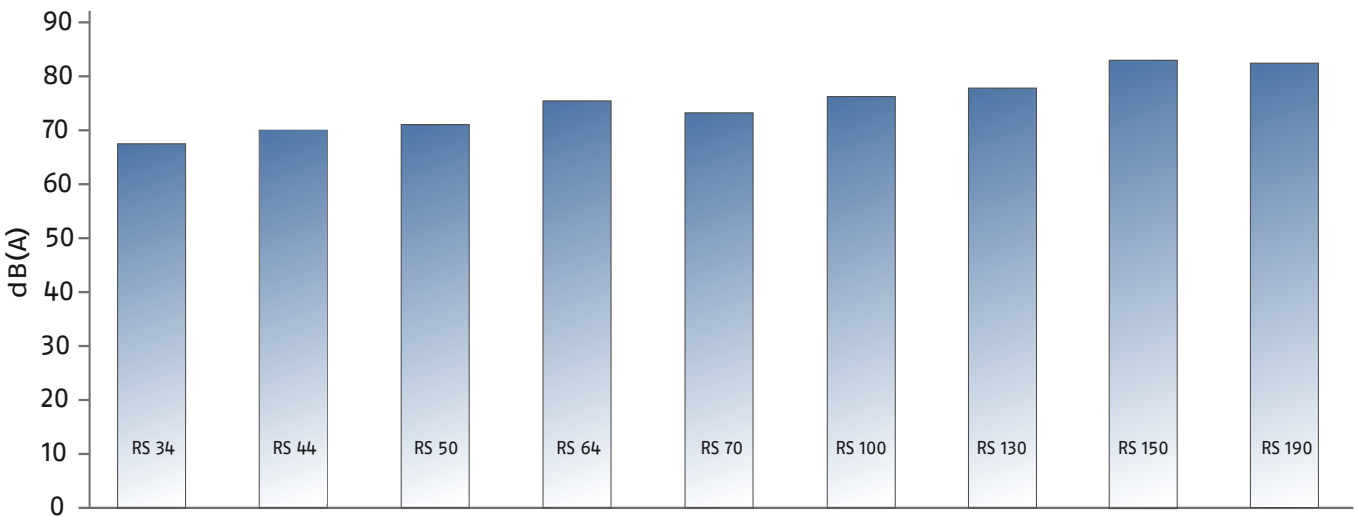
NO2 EMISSIONS (gas G20)



CO EMISSIONS (gas G20)



NOISE EMISSIONS

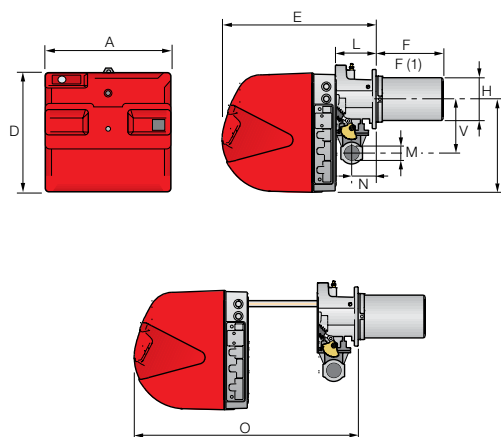


The noise emissions have been measured at the maximum output.

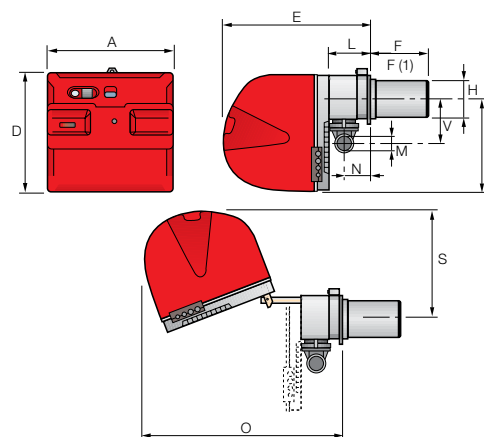
Overall Dimensions (mm)

BURNERS

RS 34 MZ - 44 MZ



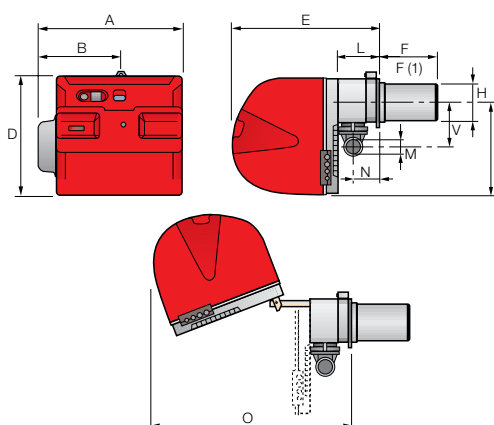
RS 50



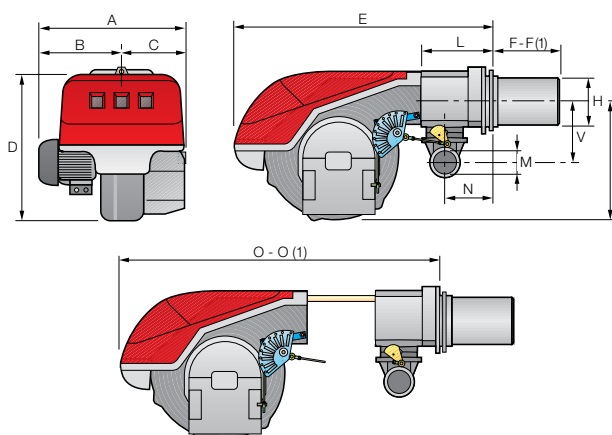
MODEL	A	D	E	F - F ⁽¹⁾	H	I	L	M	N	O	S	V
RS 34 MZ	442	422	508	216 - 351	140	305	138	1 1/2"	84	780	-	177
RS 44 MZ	442	422	508	216 - 351	152	305	138	1 1/2"	84	780	-	177
RS 50	476	474	580	216 - 351	152	352	164	1 1/2"	108	810	367	168

(1) dimension with extended head

RS 64 MZ



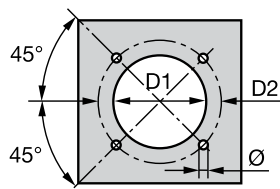
RS 70 - 100 - 130 - 150 - 190



MODEL	A	B	C	D	E	F - F ⁽¹⁾	H	I	L	M	N	O - O ⁽¹⁾	V
RS 64 MZ	533	300	-	490	640	250 - 385	179	352	222	2"	134	870 - -	221
RS 70	511	296	215	555	840	250 - 385	179	430	214	2"	134	1161 - 1296	221
RS 100	527	312	215	555	840	250 - 385	179	430	214	2"	134	1161 - 1296	221
RS 130	553	338	215	555	840	280 - 415	189	430	214	2"	134	1161 - 1296	221
RS 150	675	370	305	590	840	280 - 415	189	435	214	2"	134	1180 - 1315	221
RS 190	681	366	315	555	872	370 - 520	222	430	246	2"	150	1328 - -	262

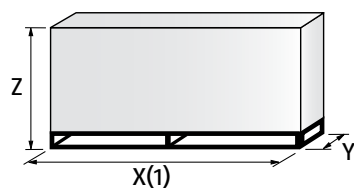
(1) dimension with extended head

BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
RS 34 MZ	160	224	M8
RS 44 MZ	160	224	M8
RS 50	160	224	M8
RS 64 MZ	185	275-325	M12
RS 70	185	275-325	M12
RS 100	185	275-325	M12
RS 130	195	275-325	M12
RS 150	195	275-325	M12
RS 190	230	325-368	M16

PACKAGING



MODEL	X ⁽¹⁾	Y	Z	kg
RS 34 MZ	1000	485	500	32
RS 44 MZ	1000	485	500	33
RS 50	1200	502	520	41
RS 64 MZ	1200	580	520	42
RS 70	1405	700	660	70
RS 100	1405	700	660	73
RS 130	1400	700	660	76
RS 150	1400-1420	1000	660	110
RS 190	1400-1420	1000	660	115

(1) dimension with standard and extended head

Installation Description

Installation, start up and maintenance must be carried out by qualified and skilled personnel.
All operations must be performed in accordance with the technical handbook supplied with the burner.

BURNER SETTING

All the burners have slide bars, for easier installation and maintenance.

After drilling the boilerplate, using the supplied gasket as a template, dismantle the blast tube from the burner and fix it to the boiler.

Adjust the combustion head.

Fit the gas train, choosing this on the basis of the maximum output of the boiler and considering the enclosed diagrams.

Refit the burner casing to the slide bars.

Close the burner, sliding it up to the flange.



ELECTRICAL CONNECTIONS AND START UP

Make the electrical connections to the boiler following the wiring diagrams included in the instruction handbook.

Turn the motor to check rotation direction (if it is a three-phase motor).

Perform a first ignition calibration on the gas train.

On start up, check:

- gas pressure at the combustion head (to max. and min. output)
- combustion quality, in terms of unburned substances and excess air.

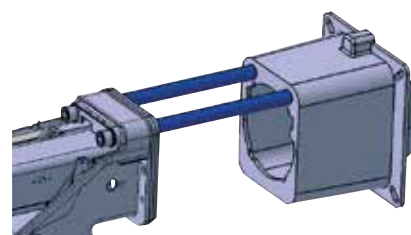


BURNER MAINTENANCE

The maintenance of RS burners is very simple thanks to the sliding bars system that allows an easy access to the internal components.

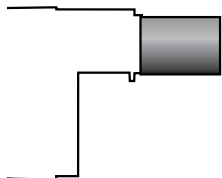
In particular the RS 34-44 MZ models have a new sliding bars system to make easier the access to the combustion head.

The RS 190 has new reinforced sliding bars that make very strong the burner structure during maintenance.



Burner Accessories

Extended head kit



“Standard head” burners can be transformed into “extended head” versions, by using the special kit. The KITS available for the various burners, giving the original and the extended lengths, are listed below.

BURNER	'STANDARD HEAD' LENGTH (mm)	'EXTENDED HEAD' LENGTH (mm)	KIT CODE
RS 34 MZ	216	351	3010428
RS 44 MZ	216	351	3010429
RS 50	216	351	3010078
RS 64 MZ	250	385	3010427
RS 70	250	385	3010117
RS 100	250	385	3010118
RS 130	280	415	3010119
RS 150	280	415	20052186
RS 190	370	520	3010443 *

* Kit to be used on burners recognizable by a serial number that is over or equal to 02426XXXXX, for burners with a serial number that is under or equal to 02416XXXXX please use the Kit coded 3010196

Spacer kit



If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the following table:

BURNER	SPACER THICKNESS S (mm)	KIT CODE
RS 34 MZ - 44 MZ - 50	110	3010095
RS 64 MZ - 70 - 100 - 130 - 150	135	3010129
RS 190	102	3000722

Continuous ventilation kit



If the burner requires continuous ventilation in the stages without flame, a special kit is available as given in the following table:

BURNER	KIT CODE
RS 34 MZ - 44 MZ	3010449
RS 50 - 64 - 70 - 100 - 130 - 150 - 190	3010094

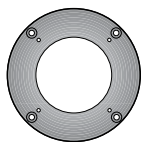
Post-ventilation kit



To prolong ventilation after opening of thermostats chain, a special kit is available.

BURNER	POST-VENTILATION TIME (S)	KIT CODE
All models	5	3010004
	20	3010452

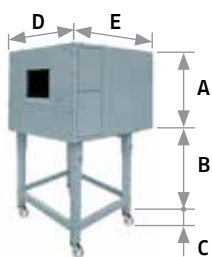
Connection flange kit



A kit is available for use where the burner opening on the boiler is of excessive diameter.

BURNER	KIT CODE
RS 34 MZ - 44 MZ - 50	3010138

Sound proofing box



If noise emission needs reducing even further, sound-proofing boxes are available.

In case of generator heights, where a lower dimension "B" is required, ask for the Box Support Kit code 20065135. The useful dimensions are 40 mm less than the total dimensions indicated in the table (A, D, E). Not suitable for outdoor use.

BURNER	BOX TYPE	A (mm)	B (mm) min-max	C (mm)	D (mm)	E (mm)	[dB(A)] (*)	BOX CODE
RS 34 MZ - 44 MZ RS 50 - RS 64 MZ	C1/3	650	372 - 980	110	690	770	10	3010403
RS 70 - 100 - 130 RS 150 - 190	C4/5	850	160 - 980	110	980	930	10	3010404

(*) Average noise reduction according to EN 15036-1 standard

LPG kit



For burning LPG gas, a special kit is available to be fitted to the combustion head on the burner, as given in the following table:

BURNER	KIT CODE FOR 'STANDARD HEAD'	KIT CODE FOR 'EXTENDED HEAD'
RS 34 MZ	3010423	3010423
RS 44 MZ	3010424	3010424
RS 50	20008173	20008173
RS 64 MZ	3010434	3010435
RS 70	20008175	20008176
RS 100	20008177	20008178
RS 130	20008179	20008180
RS 150	20050064	20050065
RS 190	3010166	3010166

Town gas kit



For burning Town gas, a special kit is available:

BURNER	KIT CODE FOR 'STANDARD HEAD' AND 'EXTENDED HEAD' (*)
RS 34 MZ	3010502
RS 44 MZ	3010503
RS 50	3010285
RS 70	3010286
RS 100	3010287
RS 130	3010288
RS 190	3010297

(*) Without CE certification

Vibration reduction kit



The kit allow you to improve flame stability in some applications, where the boiler/flue assembly is liable to resonate.

BURNER	KIT CODE
RS 50 TC - RS 50 TL	3010200
RS 70 TC - RS 70 TL	3010201
RS 100 TC - RS 100 TL	3010202
RS 130 TC	3010373
RS 130 TL	3010374
RS 190 TC	3010375

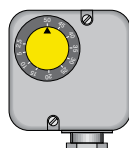
Ground fault interrupter kit



A "Ground fault interrupter kit" is available as a safety device for electrical system fault.

BURNER	KIT CODE
RS 34 MZ - 44 MZ	3010448
RS 50 - RS 64 MZ	3010321
RS 70 - 100 - 130 - 150 - 190	3010329

Gas max pressure switch kit



If necessary a Gas max pressure Switch kit is available.

BURNER	KIT CODE
RS 34 MZ - 44 MZ*	3010418
RS 50 - 64 MZ - 70 - 100 - 130 - 150 - 190	3010493

* Connectable to the burner electrical wiring through Plugs & Sockets system

Volt free contact kit



A volt free contact kit is available for installation onto the burner. It can be used for a remote interface between burner operating signals. Every burner can be equipped with a single kit for a remote check of the flame presence signal and the burner lockout indication.

BURNER	KIT CODE
RS 34 MZ - 44 MZ - 64 MZ	3010419

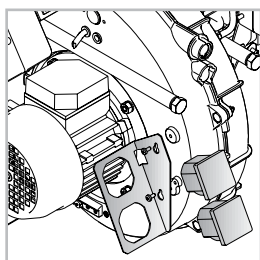
PC interface kit



To connect the control box to a personal computer for the transmission of operation, fault signals and detailed service information, an interface adapter with PC software are available.

BURNER	KIT CODE
RS 34 MZ - 44 MZ - 50 - 64 MZ - 70 - 100 - 130 - 150 - 190	3002719

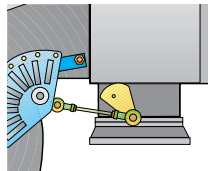
Hours counter kit



To measure the burner working time a hours counter kit is available.

BURNER	KIT CODE
RS 34 MZ - 44 MZ	3010450

DN80 gas flange kit



To modify the standard 2" burner gas input connection in to DN80 connection, a specific gas flange is available.

BURNER	KIT CODE
RS 64 MZ - 70 - 100 - 130 - 150 - 190	3010439

Protection kit (electromagnetic interferences)

When the burner is installed in a room particularly subject to electromagnetic interference (signals emitted over 10 V/m) due for example to INVERTER presence or in systems where the lengths of the thermostat connections is over 20 meters, this specific protection kit is available as an interface between the thermostatic controls and the burner.

BURNER	KIT CODE
All models	3010386

Head kit for "reverse flame chamber"



In certain cases, the use of the burner on reverse flame boilers can be improved by using an additional cylinder.

BURNER	STANDARD HEAD LENGTH WITH CYLINDER (mm)	EXTENDED HEADLENGTH WITH CYLINDER (mm)	KIT CODE (*)
RS 190	493	-	3010241

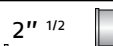
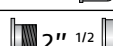
(*) Without CE certification

Gas train accessories

Adapters

In certain cases, an adapter must be fitted between the gas train and the burner, when the diameter of the gas train is different from the set diameter of the burner.

Below are given the available adapters; please see on the Gas Train list the correct adapter codes to select.

ADAPTER	LENGTH mm	ADAPTER CODE
2"  1" 1/2	70	3000822
3/4"  1" 1/2	31	3000824
DN 65  2" 1/2  2"	300	3000825
DN 80  2" 1/2  2"	300	3000826
1" 1/2  2"	35	3000843
1" 1/4  1" 1/2	35	3010124
1" 1/4  2"	35	3010126

Stabiliser spring



Accessory springs are available to vary the pressure range of the gas train stabilisers. The following table shows these accessories with their application range. Please refer to the technical manual for the correct choice of spring.

GAS TRAIN	SPRING COLOUR	SPRING PRESSURE RANGE mbar	SPRING CODE
MBC 1900/1 - 3100/1			
MBC 5000/1	White	4 - 20	3010381
	Red	20 - 40	3010382
	Black	40 - 80	3010383
	Green	80 - 150	3010384
CB 512/1	Red	25 - 55	3010131
	Black	60 - 110	3010157
	Pink	90 - 150	3090486
CB 520/1 - 525/1	Red	25 - 55	3010132
	Black	60 - 110	3010158
	Pink	90 - 150	3090487
CB 5065/1 - 5080/1	Red	25 - 55	3010133
	Black	60 - 110	3010135
	Pink	100 - 150	3090456
	Grey	140 - 200	3090992

Seal control kit



To test the valve seals on the gas train, a special "seal control kit" is available. The valve seal control device is compulsory (EN 676) on gas trains to burners with a maximum output over 1200 kW. The seal control is type VPS 504.

GAS TRAIN	KIT CODE FOR 50 Hz OPERATION	KIT CODE FOR 60 Hz OPERATION
MB/1 type	3010123	20050030
MBC/1 type	3010367	20029057
CB/1 type	3010367	20029057

Specification

DESIGNATION OF SERIES

A specific index guides your choice of burner from the various models available in the RS series. Below is a clear and detailed specification description of the product.

Series: R									
Fuel :									
S		Natural Gas							
L		Light oil							
LS		Light oil/Natural Gas							
N		Heavy oil							
Size:									
Setting:									
/1		Single stage				/E		Electronic cam	
/B		Two stage				/P		Proportioning air/gas valve	
/M		Modulating – Mechanical cam				/EV		Electronic cam predisposed for variable speed (with inverter)	
Emission:									
C11		or ...		Class 1 EN267 – EN676					
C22		or MZ		Class 2 EN267 – EN676					
C33		or BLU		Class 3 EN267 – EN676					
C23		or MX		Class 2 EN267 – Class 3 EN676					
C13		Class 1 EN267 – Class 3 EN676							
Head length:									
TC		standard head							
TL		extended head							
Sistema controllo fiamma:									
FS1		standard (1 stop every 24 h)							
FS2		continuous working (1 stop every 72 h)							
Flame control system:									
1/230/50		1/230V/50Hz							
3/230/50		3/230V/50Hz							
3/400/50		3N/400V/50Hz							
3/230–400/50		3/230V/50Hz – 3N/400V/50Hz							
3/220/60		3/220V/60Hz							
3/380/60		3N/380V/60Hz							
3/220–380/60		3N/220V/60Hz – 3N/380V/60Hz							
Auxiliary voltage:									
1/230/50		230V/50–60Hz				110V/50–60Hz			
110/50–60									
R	S	130			TC	FS1	3/230–400/50	230/50–60	
BASIC DESIGNATION					EXTENDED DESIGNATION				

AVAILABLE BURNER MODELS

RS 34 MZ	TC	FS1	1/230/50-60	230/50-60
RS 34 MZ	TL	FS1	1/230/50-60	230/50-60
RSP 34	TC	FS1	1/230/50-60	230/50-60
RS 44 MZ	TC	FS1	1/230/50-60	230/50-60
RS 44 MZ	TL	FS1	1/230/50-60	230/50-60
RS 44 MZ	TC	FS1	3/230-400/50-60	230/50-60
RS 44 MZ	TL	FS1	3/230-400/50-60	230/50-60
RS 50	TC	FS1	3/230-400/50	230/50-60
RS 50	TL	FS1	3/230-400/50	230/50-60
RS 50	TC	FS1	3/220-380/60	230/50-60
RS 50	TL	FS1	3/220-380/60	230/50-60
RS 64 MZ	TC	FS1	3/230-400/50	230/50-60
RS 64 MZ	TL	FS1	3/230-400/50	230/50-60
RS 64 MZ	TC	FS1	3/220-380/60	230/50-60
RS 64 MZ	TL	FS1	3/220-380/60	230/50-60
RS 70	TC	FS1	3/230-400/50	230/50-60
RS 70	TL	FS1	3/230-400/50	230/50-60
RS 70	TC	FS1	3/230-400/50	230/50-60
RS 70	TL	FS1	3/230-400/50	230/50-60
RS 70	TC	FS1	3/220-380/60	230/50-60
RS 70	TL	FS1	3/220-380/60	230/50-60
RS 100	TC	FS1	3/230-400/50	230/50-60
RS 100	TL	FS1	3/230-400/50	230/50-60
RS 100	TC	FS1	3/230-400/50	230/50-60
RS 100	TL	FS1	3/230-400/50	230/50-60
RS 100	TC	FS1	3/220-380/60	230/50-60
RS 100	TL	FS1	3/220-380/60	230/50-60
RS 130	TC	FS1	3/230-400/50	230/50-60
RS 130	TL	FS1	3/230-400/50	230/50-60
RS 130	TC	FS1	3/230-400/50	230/50-60
RS 130	TL	FS1	3/230-400/50	230/50-60
RS 130	TC	FS1	3/220-380/60	230/50-60
RS 130	TL	FS1	3/220-380/60	230/50-60
RS 150	TC	FS1	3/400/50	230/50-60
RS 150	TL	FS1	3/400/50	230/50-60
RS 150	TC	FS1	3/230/50	230/50-60
RS 150	TL	FS1	3/230/50	230/50-60
RS 190	TC	FS1	3/400/50	230/50-60
RS 190	TL	FS1	3/400/50	230/50-60
RS 190	TC	FS1	3/230/50	230/50-60
RS 190	TC	FS1	3/400/50	230/50-60
RS 190	TC	FS1	3/230/50	230/50-60
RS 190	TC	FS1	3/380/60	230/50-60
RS 190	TC	FS1	3/220/60	220/60

Other versions are available on request.

PRODUCT SPECIFICATION

RS 34 MZ – 44 MZ models

Monoblock forced draught gas burner with two stage operation, fully automatic, made up of:

- Air suction circuit **with sound proofing material**
- High performance fan with straight blades
- Air damper for air flow setting and butterfly valve for regulating fuel output on 1st and 2nd stage controlled by a servomotor with variable cam
- Starting motor at 2800 rpm, single-phase / 220-230V / 50-60Hz or three-phase / 380-400V / 50-60Hz
- Combustion head, that can be set on the basis of required output, fitted with:
 - stainless steel end cone, resistant to corrosion and high temperatures
 - ignition electrodes
 - ionisation probe
 - gas distributor
 - flame stability disk
- Exclusive patented HCS (Housing Cooling System) with high thermal insulation and air circulation with continuous air volume refresh for an active cooling system and avoid heat transfer to the electrical component housing
- Minimum air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- Microprocessor-based burner safety control box, with diagnostic functions
- Plug and socket for electrical connections accessible from the external of the cover
- Burner on/off selection switch
- 1st – 2nd stage manual switch
- Flame inspection window
- Slide bars for easier installation and maintenance
- Protection filter against radio interference
- IP X0D (IP 40) electric protection level

Standard equipment

- 1 gas train flange
- 1 flange gasket
- 4 screws for fixing the flange
- 1 thermal screen
- 4 screws for fixing the burner flange to the boiler
- 3 plugs for electrical connection (RS 34 – 44 MZ single-phase)
- 4 plugs for electrical connection (RS 44 MZ three-phase)
- instruction handbook for installation, use and maintenance
- spare parts catalogue

RS 50 – 64 MZ – 70 – 100 – 130 – 150 – 190 models

Monoblock forced draught gas burner with two stage operation, fully automatic, made up of:

- Air suction circuit lined with sound-proofing material
- Fan with reverse curve blades (RS 50 – 70 – 100 – 130 models) or straight blades (RS 64 MZ – 150-190 models)
- Air damper for air flow setting and butterfly valve for regulating fuel output on 1st and 2nd stage controlled by a servomotor with variable cam
- Starting motor at 2800 rpm, three-phase 400V with neutral, 50Hz
- Combustion head, that can be set on the basis of required output, fitted with:
 - stainless steel end cone, resistant to corrosion and high temperatures
 - ignition electrodes
 - ionisation probe
 - gas distributor
 - flame stability disk
- Minimum air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- Microprocessor-based burner safety control box, with diagnostic functions
- Plug and socket for electrical connections (RS 50-64 models)
- Burner on/off selection switch
- 1st – 2nd stage manual switch
- Flame inspection window
- Slide bars for easier installation and maintenance
- Protection filter against radio interference
- IP 44 electric protection level

Standard equipment

- 1 gas train flange
- 1 flange gasket
- 4 screws for fixing the flange
- 1 thermal screen
- 4 screws for fixing the burner flange to the boiler
- Wiring loom fittings for the electrical connection (RS 50-64)
- 2 slide bar extensions (for extended head models and RS 150-190 model)
- instruction handbook for installation, use and maintenance
- spare parts catalogue

Notes

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Riello Burners a world of experience in every burner we sell.

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[1]



[2]

Across the world, Riello sets the standard in reliable and high efficiency burner technology.

With burner capacity from 5 kW to 48 MW, Riello gas, oil, dual fuel and Low Nox burners deliver unbeatable performance across the full range of residential and commercial heating applications, as well as in industrial processes.

With headquarter in Legnago, Italy, Riello has been manufacturing premium quality burners for over 90 year. The manufacturing plant is equipped with the most innovative systems of assembling lines and modern manufacturing cells for a quick and flexible response to the market.

Besides, the Riello Combustion Research Centre, located in Angiari, Italy, represents one of the most modern facility in Europe and one of the most advanced in the world for the development of the combustion technology.

Today, the company's presence on worldwide markets is distinguished by a well-constructed and efficient sales network, alongside many important Training Centres located in various countries to meet its customers' needs. Riello has 13 operational branches abroad (in Europe, America and Asia), with customers in over 60 countries.

[1] BURNERS PRODUCTION PLANT
S. PIETRO, LEGNAGO (VERONA) - ITALIA

[2] HEADQUARTER BURNERS DIVISION
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